



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 142151

TO: Shailendra Kumar
Location: 5c03 / 5c18
Tuesday, January 11, 2005
Art Unit: 1621
Phone: 272-0640
Serial Number: 10 / 701942

From: Jan Delaval
Location: Biotech-Chem Library
Rem 1a51
Phone: 272-2504

jan.delaval@uspto.gov

Search Notes

Jan Please

Access DB#

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: S. Kumar Examiner #: 69594 Date: 1/10/05
Art Unit: 1621 Phone Number: 2-0640 Serial Number: 101701 942
Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL

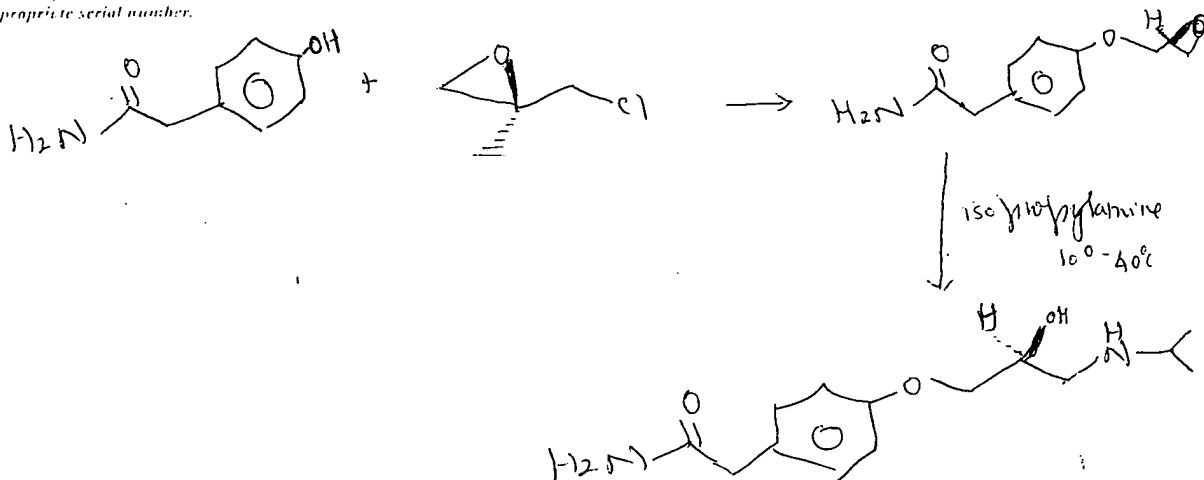
If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of invention: Process for producing acetanotol of high optical purity.
Inventors (please provide full names): Satish Ramanlal Mehta et. al.

Earliest Priority Filing Date: 10/31/2003

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.



STAFF USE ONLY

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: <u>[Signature]</u>	NA Sequence (#) _____	STN <input checked="" type="checkbox"/>
Searcher Phone #: <u>22504</u>	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <input checked="" type="checkbox"/>	Questel/Orbit _____
Date Searcher Picked Up: <u>1/14/05</u>	Bibliographic _____	Dr. Link _____
Date Completed: <u>1/14/05</u>	Litigation _____	Lexis/Nexis _____
Searcher Pre-Review Time: _____	Fulltext _____	Sequence System _____
Searcher Prep Time: <u>15</u>	Patent Family _____	WWW/Internet _____
Time Taken: <u>45</u>	Other _____	Other (specify) _____

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 11:19:39 ON 11 JAN 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 11 Jan 2005 VOL 142 ISS 3

FILE LAST UPDATED: 10 Jan 2005 (20050110/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d his

(FILE 'HOME' ENTERED AT 10:17:04 ON 11 JAN 2005)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 10:17:10 ON 11 JAN 2005

	E ATENOLOL/CN
L1	1 S E3
	E C14H22N2O3/MF
L2	342 S E3 AND 46.150.18/RID AND 1/NR
L3	18 S L2 AND BENZENEACETAMIDE
L4	12 S L3 AND 2 HYDROXY
L5	11 S L4 AND PROPOXY
L6	7 S L5 AND 4
L7	3 S L6 NOT (D/ELS OR 11C#)
L8	3 S L2 AND ATENOLOL
L9	3 S L1,L7,L8
	SEL RN
L10	37 S E1-E3/CRN
L11	10 S L10 NOT (MXS/CI OR COMPD OR WITH)
	E EPICHLOROHYDRIN/CN
L12	1 S E3
	E C3H5CLO/MF
L13	23 S E3 AND OC2/ES
	SEL RN 12 17 23
L14	3 S E1-E3
L15	3 S L12,L14
	E C11H13NO3/MF
L16	55 S E3 AND 46.150.18/RID AND OC2/ES AND 2/NR
L17	17 S L16 AND 4
L18	5 S L17 AND BENZENEACETAMIDE
L19	3 S L18 NOT D/ELS
	E C8H9NO2/MF
L20	392 S E3 AND 46.150.18/RID AND 1/NR
L21	147 S L20 AND 4
L22	1 S L21 AND BENZENEACETAMIDE
L23	9 S L20 AND BENZENEACETAMIDE
L24	2 S (SODIUM HYDROXIDE OR POTASSIUM HYDROXIDE)/CN

FILE 'HCAPLUS' ENTERED AT 11:12:24 ON 11 JAN 2005

L25 116 S L22
L26 15885 S L15
L27 32010 S EPICHLOROHYDRIN?
L28 35012 S L26,L27
L29 58 S L19
L30 3162 S L9 OR L11
L31 4161 S ATENOLOL
L32 4406 S L30,L31
L33 19 S L25 AND L28 AND L29 AND L32
L34 6 S L33 AND (L24 OR NAOH OR KOH OR (NA OR K OR SODIUM OR POTASSIU
L35 1 S L33 AND (QUAT?(L) AMMON?)
L36 6 S L34,L35
L37 105 S L30 (L) PREP+NT/RL
L38 18 S L33 AND L37
L39 8366 S (L22 OR L28 OR L19) (L) RACT+NT/RL
L40 920 S (L22 OR L28 OR L19) (L) CAT/RL
L41 18 S L38 AND L39,L40
L42 6 S L36 AND L41
L43 13 S L33-L36,L38,L41 NOT L42
L44 19 S L42,L43
SEL RN

FILE 'REGISTRY' ENTERED AT 11:17:17 ON 11 JAN 2005

L45 116 S E1-E116
L46 1 S L45 AND L22
L47 3 S L45 AND L15
L48 3 S L45 AND L19
L49 5 S L45 AND L9,L11
L50 104 S L45 NOT L46-L49
L51 3 S L50 AND IUM
L52 3 S L50 AND N N N
L53 3 S L50 AND N N
L54 3 S L51-L53
L55 1 S L45 AND L24

FILE 'HCAPLUS' ENTERED AT 11:19:16 ON 11 JAN 2005

L56 2 S L54 AND L44
L57 19 S L44,L56

FILE 'HCAPLUS' ENTERED AT 11:19:39 ON 11 JAN 2005

=> d all hitstr tot l57

L57 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:885852 HCAPLUS
DN 141:337650
ED Entered STN: 26 Oct 2004
TI Process for the purification of **atenolol**
IN Datta, Debashish; Muralikrishna, Dantu; Patel, Jayesh Raman
PA Lupin Laboratories Ltd., India
SO Indian, 21 pp.
CODEN: INXXAP
DT Patent
LA English
IC ICM C07C103-26
ICS A61K031-165
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 25
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

PI IN 182584 A 19990508 IN 1996-BO529 19961101
 PRAI IN 1996-BO529 19961101
 CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

IN 182584 ICM C07C103-26
 ICS A61K031-165

AB A process for purification of **atenolol** which comprises slurring a crude **atenolol** base in water and adjusting the pH to 4-8 with a mineral acid at which the crude base dissolves to form a solution, filtering the resulting solution to remove neutral impurities which are insol. in water, treating the aqueous acidic filtrate with activated charcoal to remove the remaining undesired impurities and filtering the charcoal-treated solution and treating with an alkali and separating the **atenolol** in purified form.

ST **atenolol** purifn process

IT Charcoal

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
 (activated; process for purification of **atenolol**)

IT 29122-68-7P, **Atenolol**

RL: PUR (Purification or recovery); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (process for purification of **atenolol**)

IT 75-31-0, Isopropylamine, reactions 106-89-8, **Epichlorohydrin**, reactions 17194-82-0, p-Hydroxyphenylacetamide

RL: RCT (Reactant); RACT (Reactant or reagent)
 (process for purification of **atenolol**)

IT 29122-69-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (process for purification of **atenolol**)

IT 56392-14-4 61698-76-8 87619-83-8

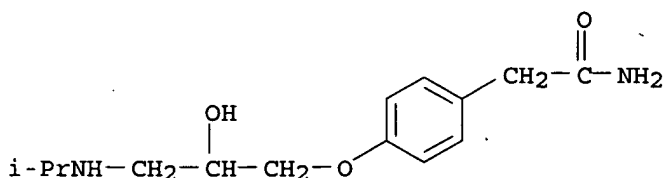
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (synthetic impurity; process for purification of **atenolol**)

IT 29122-68-7P, **Atenolol**

RL: PUR (Purification or recovery); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (process for purification of **atenolol**)

RN 29122-68-7 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI)
 (CA INDEX NAME)

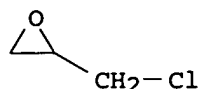


IT 106-89-8, **Epichlorohydrin**, reactions 17194-82-0, p-Hydroxyphenylacetamide

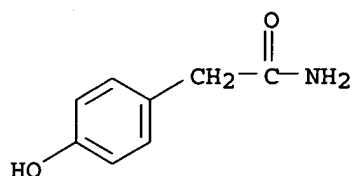
RL: RCT (Reactant); RACT (Reactant or reagent)
 (process for purification of **atenolol**)

RN 106-89-8 HCAPLUS

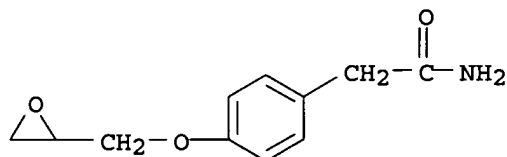
CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



IT 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (process for purification of **atenolol**)
 RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



L57 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2000:610971 HCAPLUS
 DN 134:41957
 ED Entered STN: 05 Sep 2000
 TI Synthesis of **atenolol** from benzylcyanide
 AU Wei, Chang-mei
 CS Dept. of Chemistry, Huaiyin Normal College, Huaiyin, 223001, Peop. Rep. China
 SO Huaihai Gongxueyuan Xuebao (2000), 9(2), 36-38
 CODEN: HGXKFX; ISSN: 1008-3499
 PB Huaihai Gongxueyuan Xuebao Bianjibu
 DT Journal
 LA Chinese
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 1
 OS CASREACT 134:41957
 AB The title antihypertensive was prepared in 7 step in 12.06% yield from benzyl cyanide.
 ST **atenolol** prepn antihypertensive
 IT Antihypertensives
 (synthesis of **atenolol** from benzyl cyanide)
 IT 75-31-0, Isopropylamine, reactions 106-89-8,
Epichlorohydrin, reactions 140-29-4, Benzyl cyanide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of **atenolol** from benzyl cyanide)
 IT 104-03-0P 156-38-7P 555-21-5P 1197-55-3P 17194-82-0P
 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); **RACT (Reactant or reagent)**
(synthesis of atenolol from benzyl cyanide)

IT 29122-68-7P, Atenolol

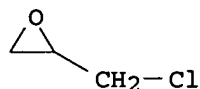
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(synthesis of atenolol from benzyl cyanide)

IT 106-89-8, Epichlorohydrin, reactions

RL: **RCT (Reactant); RACT (Reactant or reagent)**
(synthesis of atenolol from benzyl cyanide)

RN 106-89-8 HCAPLUS

CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)

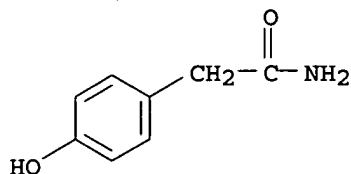


IT 17194-82-0P 29122-69-8P

RL: **RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**
(synthesis of atenolol from benzyl cyanide)

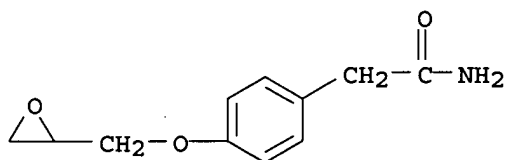
RN 17194-82-0 HCAPLUS

CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 29122-69-8 HCAPLUS

CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)

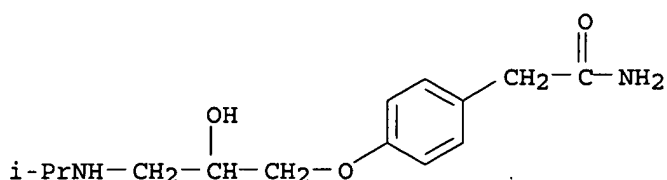


IT 29122-68-7P, Atenolol

RL: **SPN (Synthetic preparation); PREP (Preparation)**
(synthesis of atenolol from benzyl cyanide)

RN 29122-68-7 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI)
(CA INDEX NAME)



L57 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:785138 HCAPLUS
DN 132:122142
ED Entered STN: 12 Dec 1999
TI CsF in organic synthesis. Regioselective nucleophilic reactions of phenols with oxiranes leading to enantiopure β -blockers
AU Kitaori, Kazuhiro; Furukawa, Yoshiro; Yoshimoto, Hiroshi; Otera, Junzo
CS Research Laboratories of Daiso Co., Ltd., Amagasaki, 660-0842, Japan
SO Tetrahedron (1999), 55(50), 14381-14390
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
CC 21-2 (General Organic Chemistry)
OS CASREACT 132:122142
AB The two modes of the paths in the reaction of oxiranes with phenols are completely controlled by CsF. Glycidyl nosylate undergoes exclusive substitution at the C1 position whereas the ring-opening (C-3 attack) occurs with **epichlorohydrin**, glycidol, and 1,2-epoxyalkanes. These reactions provide convenient access to enantiopure β -blockers.
ST nucleophilic reaction phenol oxirane cesium fluoride
IT Regiochemistry
Ring opening
Substitution reaction, nucleophilic
(regioselective nucleophilic reactions of phenols with oxiranes in presence of cesium fluoride)
IT Epoxides
Phenols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(regioselective nucleophilic reactions of phenols with oxiranes in presence of cesium fluoride)
IT 67-56-1, Methanol, reactions 100-51-6, Benzyl alcohol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(regioselective nucleophilic reactions of phenols or alcs. with oxiranes in presence of cesium fluoride)
IT 56552-80-8P 86195-49-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(regioselective nucleophilic reactions of phenols or alcs. with oxiranes in presence of cesium fluoride)
IT 13400-13-0, Cesium fluoride
RL: CAT (Catalyst use); USES (Uses)
(regioselective nucleophilic reactions of phenols with oxiranes in presence of cesium fluoride)
IT 90-05-1, 2-Methoxyphenol 95-48-7, reactions 99-76-3, Methyl 4-hydroxybenzoate 100-02-7, reactions 106-41-2, 4-Bromophenol 106-44-5, 4-Methylphenol, reactions 106-48-9, 4-Chlorophenol 108-95-2, Phenol, reactions 123-08-0 150-76-5, 4-Methoxyphenol 767-00-0, 4-Cyanophenol 1126-20-1, 2-Allyloxyphenol 1436-34-6, Butyloxirane 14191-95-8, 4-Cyanomethylphenol 17194-82-0 51594-55-9, (R)-**Epichlorohydrin**, reactions 60456-23-7, (S)-Glycidol 70987-78-9 77495-66-0, (R)-Hexyloxirane 118712-60-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(regioselective nucleophilic reactions of phenols with oxiranes in presence of cesium fluoride)
IT 3102-00-9P 4199-10-4P 22972-96-9P 26328-11-0P 52153-43-2P
56715-12-9P 61248-75-7P 66901-82-4P 70987-80-3P
71031-03-3P 71048-65-2P 82430-38-4P 93379-54-5P, (S)-**Atenolol** 99103-03-4P 101693-40-7P 112652-61-6P
125279-82-5P 129098-55-1P 129098-57-3P 154872-58-9P 154968-43-1P
256460-10-3P 256460-11-4P 256460-14-7P 256460-15-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(regioselective nucleophilic reactions of phenols with oxiranes in presence of cesium fluoride)

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Ader, U; Tetrahedron: Asymmetry 1992, V3, P521 HCAPLUS
- (2) Cardillo, G; Tetrahedron 1987, V43, P2505 HCAPLUS
- (3) Caron, M; J Org Chem 1985, V50, P1557 HCAPLUS
- (4) Chen, J; Tetrahedron Lett 1995, V36, P2379 HCAPLUS
- (5) Fuji, M; Chem Pharm Bull 1992, V40, P2353 HCAPLUS
- (6) Guivisdalsky, P; J Org Chem 1989, V54, P4637 HCAPLUS
- (7) Iranpoor, N; Synth Commun 1990, V20, P2789 HCAPLUS
- (8) Ishibashi, H; Chem Pharm Bull 1994, V42, P271 HCAPLUS
- (9) Ishibashi, H; Tetrahedron Lett 1993, V34, P489 HCAPLUS
- (10) Kitaori, K; Chem Pharm Bull 1997, V50, P1557
- (11) Kitaori, K; Synlett 1998, P499 HCAPLUS
- (12) Kitaori, K; Tetrahedron Lett 1998, V39, P3173 HCAPLUS
- (13) Klunda, J; J Org Chem 1986, V51, P3710
- (14) Klunder, J; J Org Chem 1989, V54, P1295 HCAPLUS
- (15) Ko, S; J Org Chem 1986, V51, P5413 HCAPLUS
- (16) Ko, S; J Org Chem 1987, V52, P667 HCAPLUS
- (17) Mambu, Y; Tetrahedron Lett 1990, V31, P1723
- (18) Martin, V; Tetrahedron Lett 1988, V29, P2701 HCAPLUS
- (19) Masaki, Y; Synlett 1993, P847 HCAPLUS
- (20) McClure, D; J Am Chem Soc 1979, V101, P3666 HCAPLUS
- (21) Moberg, C; Tetrahedron Lett 1992, V33, P21971
- (22) Nelson, W; J Org Chem 1977, V42, P1006 HCAPLUS
- (23) Nelson, W; J Org Chem 1978, V43, P3641 HCAPLUS
- (24) Otera, J; J Org Chem 1988, V53, P27
- (25) Otera, J; Tetrahedron 1997, V53, P13633 HCAPLUS
- (26) Otera, J; Tetrahedron Lett 1985, V26, P3219 HCAPLUS
- (27) Posner, G; Tetrahedron Lett 1975, P3597 HCAPLUS
- (28) Riego, J; Chem Lett 1986, P1565 HCAPLUS
- (29) Sasai, H; Tetrahedron 1994, V50, P12313 HCAPLUS
- (30) Sato, T; J Org Chem 1995, V60, P2627 HCAPLUS
- (31) Sato, T; Synlett 1995, P336 HCAPLUS
- (32) Shoda, S; Chem Lett 1980, P391 HCAPLUS
- (33) Smith, J; Synthesis 1984, P629 HCAPLUS
- (34) Stinson, S; Chem Eng News 1997, June 2, P28
- (35) Wang, Z; Tetrahedron Lett 1993, V34, P2267 HCAPLUS
- (36) Wunsche, K; Tetrahedron: Asymmetry 1996, V7, P2017

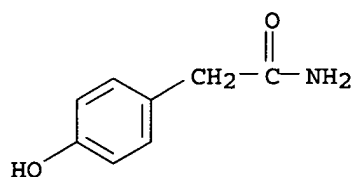
IT 17194-82-0 51594-55-9, (R)-Epichlorohydrin,
reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(regioselective nucleophilic reactions of phenols with oxiranes in
presence of cesium fluoride)

RN 17194-82-0 HCAPLUS

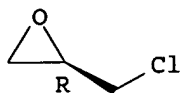
CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 51594-55-9 HCAPLUS

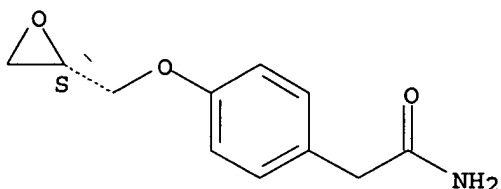
CN Oxirane, (chloromethyl)-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



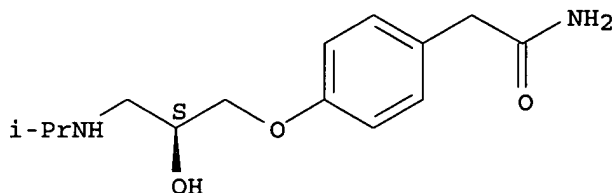
IT 56715-12-9P 93379-54-5P, (S)-Atenolol
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (regioselective nucleophilic reactions of phenols with oxiranes in
 presence of cesium fluoride)
 RN 56715-12-9 HCAPLUS
 CN Benzeneacetamide, 4-[(2S)-oxiranylmethoxy] - (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



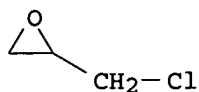
RN 93379-54-5 HCAPLUS
 CN Benzeneacetamide, 4-[(2S)-2-hydroxy-3-[(1-methylethyl)amino]propoxy] -
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

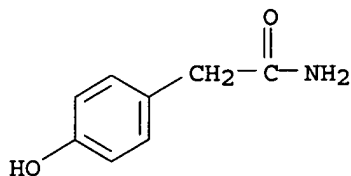


L57 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1999:503559 HCAPLUS
 DN 131:129738
 ED Entered STN: 13 Aug 1999
 TI Improved synthesis of **atenolol**
 AU Xu, Bo
 CS College Pharmaceutical Eng., East China Univ. Sci & Tech, Shanghai,
 200237, Peop. Rep. China
 SO Guangxi Huagong (1999), 28(2), 9-10
 CODEN: GUHUF2; ISSN: 1003-0840
 PB Guangxi Huagong Bianjibu
 DT Journal
 LA Chinese
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 AB **Atenolol** was prepared in 2 steps from 4-hydroxyphenylacetamide and
epichlorohydrin.
 ST **atenolol** prepn
 IT 75-31-0, Isopropylamine, reactions 106-89-8,
Epichlorohydrin, reactions 17194-82-0,
 4-Hydroxyphenylacetamide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of **atenolol**)

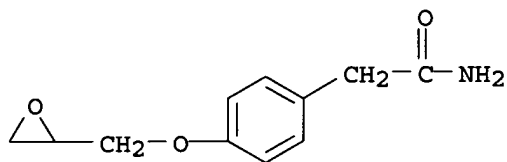
IT 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (synthesis of atenolol)
 IT 29122-68-7P, Atenolol
 RL: SPN (Synthetic preparation); PREP (Preparation) (synthesis of atenolol)
 IT 106-89-8, Epichlorohydrin, reactions 17194-82-0, 4-Hydroxyphenylacetamide
 RL: RCT (Reactant); RACT (Reactant or reagent) (synthesis of atenolol)
 RN 106-89-8 HCAPLUS
 CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



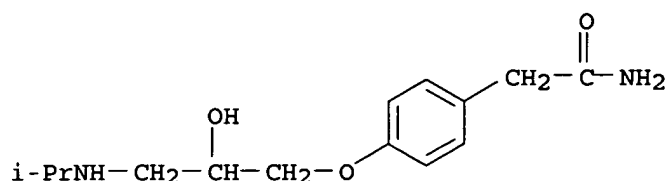
RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



IT 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (synthesis of atenolol)
 RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)

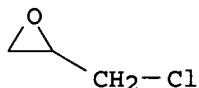


IT 29122-68-7P, Atenolol
 RL: SPN (Synthetic preparation); PREP (Preparation) (synthesis of atenolol)
 RN 29122-68-7 HCAPLUS
 CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amin]propoxy]- (9CI) (CA INDEX NAME)

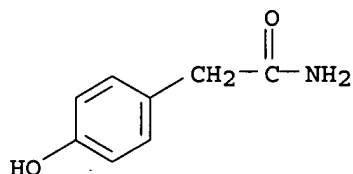


L57 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1998:446687 HCAPLUS
 DN 129:54146
 ED Entered STN: 20 Jul 1998
 TI A Synthesis of **Atenolol** Using a Nitrile Hydration Catalyst
 AU Akisanya, Joseph; Parkins, Adrian W.; Steed, Jonathan W.
 CS Department of Chemistry, King's College London, London, WC2R 2LS, UK
 SO Organic Process Research & Development (1998), 2(4), 274-276
 CODEN: OPRDFK; ISSN: 1083-6160
 PB American Chemical Society
 DT Journal
 LA English
 CC 25-7 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 AB The synthesis of **atenolol** is described using a platinum containing homogeneous catalyst for the conversion of a nitrile to an amide. The catalytic reaction may be employed as the final step in the synthesis or in the preparation of the intermediate 4-hydroxyphenylacetamide. The structure of the nitrile intermediate, 1-(4'-cyanomethylphenoxy)-2-hydroxy-3-isopropylaminopropane, has been determined by X-ray crystallog.
 ST **atenolol** prepn catalyst
 IT Catalysts
 (nitrile hydration; synthesis of **atenolol** using a nitrile hydration catalyst)
 IT Crystallography
 (synthesis and crystal structure data of **atenolol** using a nitrile hydration catalyst)
 IT 29277-73-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis and crystal structure data of **atenolol** using a nitrile hydration catalyst)
 IT 173416-05-2
 RL: CAT (Catalyst use); USES (Uses)
 (synthesis of **atenolol** using a nitrile hydration catalyst)
 IT 75-31-0, 2-Propanamine, reactions 106-89-8, reactions 17194-82-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of **atenolol** using a nitrile hydration catalyst)
 IT 14191-95-8P 29122-69-8P 35198-42-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (synthesis of **atenolol** using a nitrile hydration catalyst)
 IT 29122-68-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of **atenolol** using a nitrile hydration catalyst)
 RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Barbour, L; RES2INS 1995
 (2) Barrett, A; DE 2007751 1974 HCAPLUS
 (3) Barrett, A; US 3836671 1974 HCAPLUS
 (4) Bevinakatti, H; J Org Chem 1992, V57, P6003 HCAPLUS
 (5) Eckart, R; Pharmazie 1975, V30, P633
 (6) Ghaffar, T; Tetrahedron Lett 1995, V36, P8657 HCAPLUS

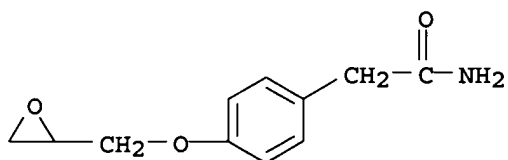
- (7) Kleidernigg, O; Chirality 1994, V6, P411 HCAPLUS
 (8) Le Count, D; Chronicles of Drug Discovery 1982, V1, P113 HCAPLUS
 (9) Liler, M; J Chem Soc 1958, P1084 HCAPLUS
 (10) March, J; Advanced Organic Chemistry, 4th ed 1992, P391
 (11) Matsuoka, K; US 5386056 HCAPLUS
 (12) Matsuoka, K; WO 9323372 HCAPLUS
 (13) Otwinowski, Z; Methods Enzymol 1996, V276, P307
 (14) O'Connor, C; Quart Re 1970, V24, P553 HCAPLUS
 (15) Payne, G; J Org Chem 1962, V27, P3819 HCAPLUS
 (16) Rabinovitch, B; Can J Res 1942, V20B, P221 HCAPLUS
 (17) Ravindranathan, M; J Org Chem 1982, V47, P4812 HCAPLUS
 (18) Rietzel, C; GB 2155923 A 1985 HCAPLUS
 (19) Rietzel, C; BE 901850 1985 HCAPLUS
 (20) Rosenberg, H; GB 2212801 A 1989 HCAPLUS
 (21) Salkowski, H; Chem Ber 1889, V22, P2137
 (22) Schwartz, M; J Org Chem 1976, V41, P2502 HCAPLUS
 (23) Sheldrick, G; SHELXL-97 1997
 (24) Sugai, T; Biosci Biotech Biochem 1997, V61, P1419 HCAPLUS
 (25) The Cambridge Crystallographic Data Centre; teched@chemcrys.cam.ac.uk
 (26) Zil'Berman, E; Russ Chem Re 1984, V53, P900
 IT 106-89-8, reactions 17194-82-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of atenolol using a nitrile hydration catalyst)
 RN 106-89-8 HCAPLUS
 CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



- RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)

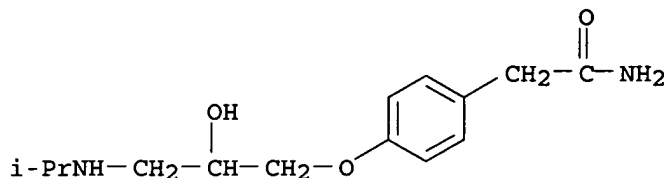


- IT 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (synthesis of atenolol using a nitrile hydration catalyst)
 RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



- IT 29122-68-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of atenolol using a nitrile hydration catalyst)

RN 29122-68-7 HCAPLUS
 CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy] - (9CI)
 (CA INDEX NAME)



L57 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1997:141773 HCAPLUS
 DN 126:225082
 ED Entered STN: 05 Mar 1997
 TI A practical synthesis of optically active **atenolol** from chiral **epichlorohydrin**
 AU Kitaori, Kazuhiro; Takehira, Yoshikazu; Furukawa, Yoshiro; Yoshimoto, Hiroshi; Otera, Junzo
 CS Res. Labs. Daiso Co., Ltd., Amagasaki, 660, Japan
 SO Chemical & Pharmaceutical Bulletin (1997), 45(2), 412-414
 CODEN: CPBTAL; ISSN: 0009-2363
 PB Pharmaceutical Society of Japan
 DT Journal
 LA English
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 AB The synthesis of (R)-**atenolol** and (S)-**atenolol** was achieved in two steps starting from 4-hydroxybenzeneacetamide. Both enantiomers of 4-(oxiranylmethoxy)benzeneacetamide were synthesized from 4-hydroxybenzeneacetamide and (R)- and (S)-**epichlorohydrin** using an alkali metal hydroxide and/or BTA (benzyltrimethylammonium chloride), resp. Subsequent treatment of the epoxide with isopropylamine afforded **atenolol** with excellent enantiomeric excess (>98% ee).
 ST **atenolol** asym synthesis; oxiranylmethoxy benzeneacetamide prep
 IT **atenolol** intermediate
 IT Asymmetric synthesis and induction
 (asym. synthesis **atenolol**)
 IT 17194-82-0, 4-Hydroxybenzeneacetamide 51594-55-9, (R)-**Epichlorohydrin**, reactions 67843-74-7, (S)-**Epichlorohydrin**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (asym. synthesis **atenolol**)
 IT 56715-12-9P, (S)-4-(Oxiranylmethoxy)benzeneacetamide 136259-70-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (asym. synthesis **atenolol**)
 IT 56715-13-0P, (R)-**Atenolol** 93379-54-5P, (S)-**Atenolol**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (asym. synthesis **atenolol**)
 RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Akiyama, A; CHEMTECH 1988, V18, P640
 (2) Anon; US 3663607 1972 HCAPLUS
 (3) Anon; US 3836671 1974 HCAPLUS
 (4) Anon; 1975 HCAPLUS
 (5) Anon; US 3934032 1976 HCAPLUS
 (6) Anon; Barclays de Zoet Wedd Research Report 1991, V6(2), P22

- (7) Bevinakatti, H; J Org Chem 1992, V57, P6003 HCAPLUS
 (8) Borman, S; Chem Eng News 1990, V28, P9
 (9) Chen, C; Angew Chem, Int Ed Engl 1989, V28, P695
 (10) Deutsch, D; CHEMTECH 1991, V21, P157 HCAPLUS
 (11) Howe, R; Nature (London) 1966, V210, P1336 HCAPLUS
 (12) Kasai, N; Agric Biol Chem 1990, V54, P3158
 (13) Kasai, N; J Ind Microbiol 1992, V10, P37 HCAPLUS
 (14) Kasai, N; J Ind Microbiol 1992, V9, P97 HCAPLUS
 (15) Klibanov, A; Acc Chem Res 1990, V23, P114 HCAPLUS
 (16) Margolin, A; CHEMTECH 1991, V21, P160 HCAPLUS
 (17) Nelson, W; J Org Chem 1977, V42, P1006 HCAPLUS
 (18) Nelson, W; J Org Chem 1978, V43, P3641 HCAPLUS
 (19) Pearson, A; Chem Eng News 1991, V71, P16
 (20) Pearson, A; J Pharmacol Exp Ther 1989, V250, P759 HCAPLUS
 (21) Wong, C; Science 1989, V244, P1145 HCAPLUS
 (22) Yamada, H; Angew Chem, Int Ed Engl 1988, V27, P622

IT 17194-82-0, 4-Hydroxybenzeneacetamide 51594-55-9, (R) -

Epichlorohydrin, reactions 67843-74-7, (S) -

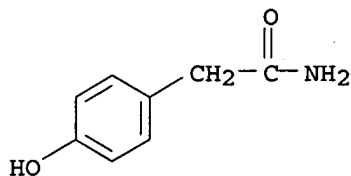
Epichlorohydrin, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(asym. synthesis atenolol)

RN 17194-82-0 HCAPLUS

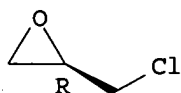
CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 51594-55-9 HCAPLUS

CN Oxirane, (chloromethyl)-, (2R)- (9CI) (CA INDEX NAME)

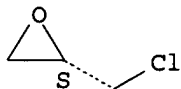
Absolute stereochemistry. Rotation (-).



RN 67843-74-7 HCAPLUS

CN Oxirane, (chloromethyl)-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT 56715-12-9P, (S) -4-(Oxiranylmethoxy)benzeneacetamide
 136259-70-6P

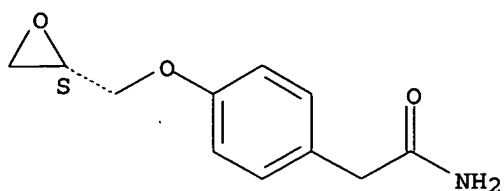
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)

(asym. synthesis atenolol)

RN 56715-12-9 HCAPLUS

CN Benzeneacetamide, 4-[(2S)-oxiranylmethoxy]- (9CI) (CA INDEX NAME)

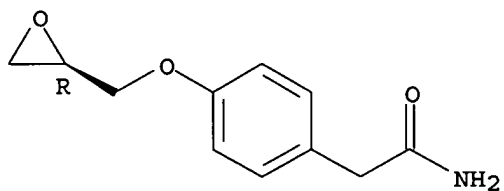
Absolute stereochemistry. Rotation (+).



RN 136259-70-6 HCAPLUS

CN Benzeneacetamide, 4-(oxiranylmethoxy)-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



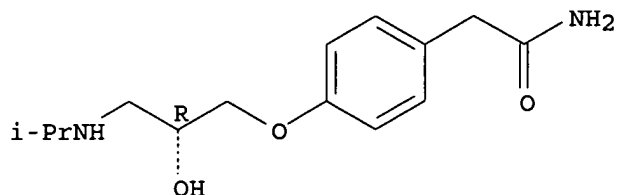
IT 56715-13-0P, (R)-Atenolol 93379-54-5P, (S)-
Atenolol

RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. synthesis atenolol)

RN 56715-13-0 HCAPLUS

CN Benzeneacetamide, 4-[(2R)-2-hydroxy-3-[(1-methylethyl)amino]propoxy]-
(9CI) (CA INDEX NAME)

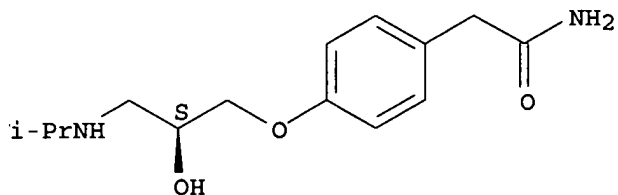
Absolute stereochemistry. Rotation (+).



RN 93379-54-5 HCAPLUS

CN Benzeneacetamide, 4-[(2S)-2-hydroxy-3-[(1-methylethyl)amino]propoxy]-
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



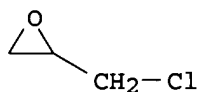
L57 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1996:482631 HCAPLUS

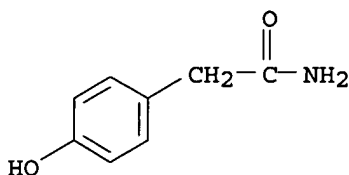
DN 125:167503

ED Entered STN: 14 Aug 1996

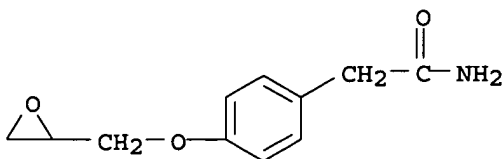
TI Synthesis of **atenolol**
 AU Cui, Yanxia; Jiang, Weiguo; Li, Shufen
 CS Res. Inst. Northeast Gen. Pharmaceutical Factory, Shenyang, 110026, Peop.
 Rep. China
 SO Zhongguo Yaowu Huaxue Zazhi (1996), 6(1), 62-63
 CODEN: ZYHZEJ; ISSN: 1005-0108
 PB Zhongguo Yaowu Huaxue Zazhi Bianjibu
 DT Journal
 LA Chinese
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 AB **Atenolol** was prepared in 2 steps in 52.8% overall yield by
 etherification of 4-hydroxyphenylacetamide with **epichlorohydrin**
 followed by amination with isopropylamine.
 ST **atenolol** prepn
 IT 75-31-0, Isopropylamine, reactions 106-89-8,
Epichlorohydrin, reactions 17194-82-0, p-Hydroxy
 phenylacetamide 29122-69-8, Benzeneacetamide,
 4-(oxiranylmethoxy) -
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of **atenolol**)
 IT 29122-68-7P, **Atenolol**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of **atenolol**)
 IT 106-89-8, **Epichlorohydrin**, reactions 17194-82-0
 , p-Hydroxy phenylacetamide 29122-69-8, Benzeneacetamide,
 4-(oxiranylmethoxy) -
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of **atenolol**)
 RN 106-89-8 HCAPLUS
 CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



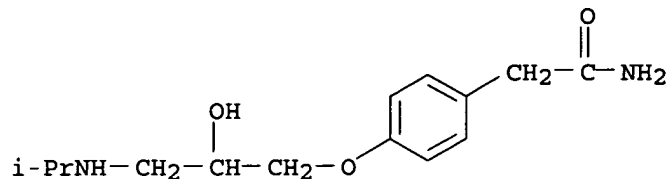
RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



IT 29122-68-7P, **Atenolol**
 RL: SPN (Synthetic preparation); PREP (Preparation)

(synthesis of **atenolol**)

RN 29122-68-7 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy] - (9CI)
(CA INDEX NAME)

L57 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1994:298454 HCAPLUS

DN 120:298454

ED Entered STN: 11 Jun 1994

TI Phase transfer catalytic process for preparing intermediates of **atenolol**, propranolol, and their derivatives

IN Jang, Shyue Ming; Shieh, Tian Shy

PA Industrial Technology Research Institute, Taiwan

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM C07D301-28

ICS C07D303-23; C07C041-03; C07C043-205

NCL 549517000

CC 27-2 (Heterocyclic Compounds (One Hetero Atom))

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5290958	A	19940301	US 1993-33047	19930818
	GB 2276167	A1	19940921	GB 1993-12267	19930615
	GB 2276167	B2	19951213		
PRAI	US 1993-33047	A	19930818		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5290958	ICM	C07D301-28
	ICS	C07D303-23; C07C041-03; C07C043-205
	NCL	549517000
GB 2276167	ECLA	C07C041/16; C07D303/22B

OS MARPAT 120:298454

AB The title process comprises O-alkylation of 4-(H₂NOCH₂C)₆H₄OH and α-naphthol by **epichlorohydrin** in the presence of R₁R₂R₃R₄NX or (R₅)₃NHX (1 of R₁-R₄ = C₉-20alkyl and the remaining R₁-R₅ = C₁-20alkyl; X = halo) to give the corresponding epoxides and halohydrins.

ST **atenolol** propranolol intermediate; phenol naphthol etherification **epichlorohydrin** catalyst

IT 106-89-8, **Epichlorohydrin**, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(O-alkylation of hydroxyphenylacetamide by, in preparation of **atenolol** intermediate, catalysts for)

IT 17194-82-0, 4-Hydroxyphenylacetamide

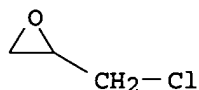
RL: RCT (Reactant); RACT (Reactant or reagent)

(O-alkylation of, in preparation of **atenolol** intermediate, catalysts for)

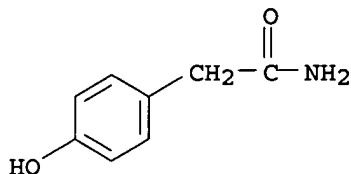
IT 90-15-3, α-Naphthol

RL: RCT (Reactant); RACT (Reactant or reagent)

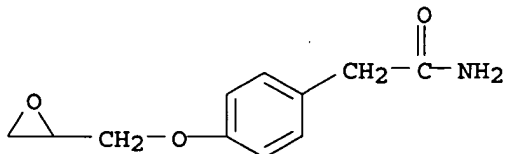
- (O-alkylation of, in preparation of propranolol intermediate, catalysts for)
- IT **29122-69-8P** 115538-83-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as **atenolol** intermediate, method for)
- IT 2461-42-9P 20133-93-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as propranolol intermediate, method for)
- IT 525-66-6P, Propranolol **29122-68-7P**, **Atenolol**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, method for)
- IT 75-31-0, Isopropylamine, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, in preparation of **atenolol**)
- IT **106-89-8**, **Epichlorohydrin**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (O-alkylation of hydroxyphenylacetamide by, in preparation of **atenolol** intermediate, catalysts for)
- RN 106-89-8 HCAPLUS
 CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



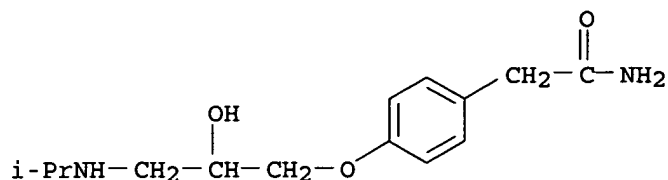
- IT **17194-82-0**, 4-Hydroxyphenylacetamide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (O-alkylation of, in preparation of **atenolol** intermediate, catalysts for)
- RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



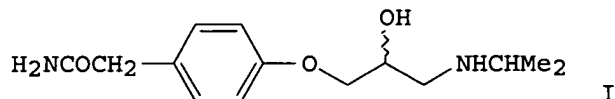
- IT **29122-69-8P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as **atenolol** intermediate, method for)
- RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



- IT **29122-68-7P**, **Atenolol**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, method for)
- RN 29122-68-7 HCAPLUS
 CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI)
 (CA INDEX NAME)

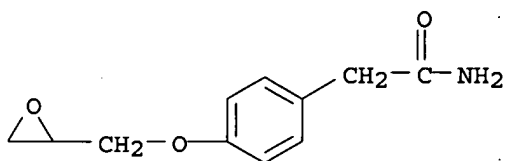


L57 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1992:633552 HCAPLUS
 DN 117:233552
 ED Entered STN: 13 Dec 1992
 TI Lipase catalysis in organic solvents. Application to the synthesis of (R)- and (S)-**atenolol**
 AU Bevinakatti, H. S.; Banerji, A. A.
 CS Alchemie Res. Cent., Thane, 400601, India
 SO Journal of Organic Chemistry (1992), 57(22), 6003-5
 CODEN: JOCEAH; ISSN: 0022-3263
 DT Journal
 LA English
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 1, 7
 GI



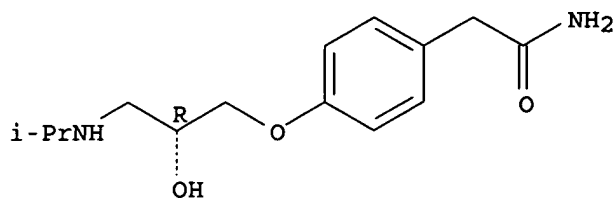
AB Stereoselective synthesis of (R)- and (S)-**atenolol** I was achieved in five steps starting from p-HOC6H4CH2CO2H. Lipase from *Pseudomonas cepacia* showed excellent selectivity toward kinetic resolution of key intermediates p-ClCH2CH(OR)CH2OC6H4CH2CO2Bu (R = H, Ac).
 ST **atenolol** stereoselective synthesis; lipase resolu
atenolol intermediate
 IT *Pseudomonas cepacia*
 (lipase from, as catalyst in acylation of (chlorohydroxypropoxy)phenylacetate in synthesis of **atenolol**)
 IT 75-31-0, Isopropylamine, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (amination by, of (chlorohydroxypropoxyphenyl)acetate, in synthesis of **atenolol**)
 IT 71-36-3, 1-Butanol, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (esterification by, of hydroxyphenylacetic acid)
 IT 156-38-7, p-Hydroxyphenylacetic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (esterification of, by butanol)
 IT 29122-69-8P 115538-83-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and acetylation of)
 IT 143925-25-1P 143925-26-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)

- (preparation and conversion to **atenolol**)
- IT 143925-23-9P 143925-24-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and kinetic resolution of)
- IT 144015-97-4P 144015-98-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and lipase-catalyzed acylation of)
- IT 144017-03-8P 144017-04-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and lipase-catalyzed deacylation of)
- IT 79419-46-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and substitution of, by **epichlorohydrin**)
- IT 143925-21-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
- IT 56715-13-0P, (R)-**Atenolol** 93379-54-5P, (S)-
Atenolol
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by lipase catalyzed kinetic resolution from
hydroxyphenylacetic acid)
- IT 143925-22-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation, chlorination, and acetylation of)
- IT 106-89-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(substitution by, of hydroxyphenylacetic acid and its amide)
- IT 17194-82-0, p-Hydroxyphenylacetamide
RL: PROC (Process)
(substitution of, by **epichlorohydrin**)
- IT 29122-69-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and acetylation of)
- RN 29122-69-8 HCAPLUS
CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



- IT 56715-13-0P, (R)-**Atenolol** 93379-54-5P, (S)-
Atenolol
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by lipase catalyzed kinetic resolution from
hydroxyphenylacetic acid)
- RN 56715-13-0 HCAPLUS
CN Benzeneacetamide, 4-[(2R)-2-hydroxy-3-[(1-methylethyl)amino]propoxy]-
(9CI) (CA INDEX NAME)

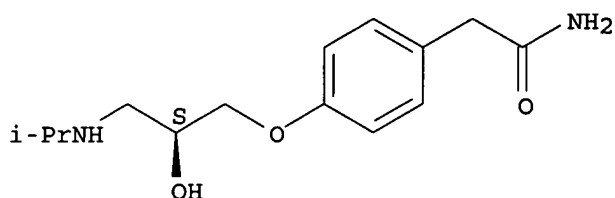
Absolute stereochemistry. Rotation (+).



RN 93379-54-5 HCAPLUS

CN Benzeneacetamide, 4-[(2S)-2-hydroxy-3-[(1-methylethyl)amino]propoxy] - (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



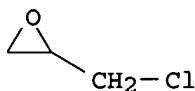
IT 106-89-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(substitution by, of hydroxyphenylacetic acid and its amide)

RN 106-89-8 HCAPLUS

CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



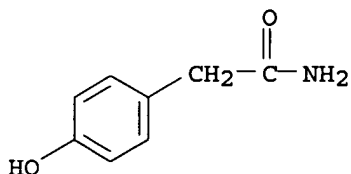
IT 17194-82-0, p-Hydroxyphenylacetamide

RL: PROC (Process)

(substitution of, by epichlorohydrin)

RN 17194-82-0 HCAPLUS

CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



L57 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1992:612160 HCAPLUS

DN 117:212160

ED Entered STN: 28 Nov 1992

TI Preparation of optically active atenolol and its intermediates

IN Takehira, Kiwa; Saraumi, Nobuaki; Kitaori, Kazuhiro

PA Daiso Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese
 IC ICM C07D301-28
 ICA A61K031-16; B01J031-02; C07B053-00; C07B061-00; C07D303-22
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04198175	A2	19920717	JP 1990-331091	19901128
	JP 06037482	B4	19940518		
PRAI	JP 1990-331091		19901128		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 04198175	ICM	C07D301-28
	ICA	A61K031-16; B01J031-02; C07B053-00; C07B061-00; C07D303-22

OS CASREACT 117:212160

AB H₂NCOCH₂C₆H₄OR-p (II; R = glycidyl) is prepared by treating H₂NCOCH₂C₆H₄OH-p (III) with optically active **epichlorohydrin** (IV) using alkali hydroxides (A) at equivalent ratio of A/III 1-1.5 in H₂O-containing solvents in the presence of R₁R₂R₃R₄N+X- (R₁-R₄ = C₁-16 alkyl, alkenyl, aralkyl, aryl; X = Cl, Br, HSO₄, OH, iodine). Optically active **atenolol** is prepared by treating II with Me₂CHNH₂. An aqueous (R)-(-)-IV was treated dropwise with a mixture of III (35.7 g), benzyltrimethylammonium chloride, and NaOH (9.44 g) in H₂O at 5° over 1 h, stirred at 5° for 51 h, neutralization by HCl, the suspension was treated added into Me₂CHNH₂ at 10° over 1 h, then stirred at 20° for 3.5 h to give 72.2% (S)-(-)-**atenolol** of 94.8% e.e.

ST **atenolol** prepn; hydroxyphenylacetamide etherification
epichlorohydrin; isopropylamine ring cleavage
 glycidyloxyphenylacetamide

IT 51594-55-9, (R)-(-)-**Epichlorohydrin**, reactions
 67843-74-7, (S)-(+)-**Epichlorohydrin**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification by, of hydroxyphenylacetamide)

IT 17194-82-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification of, by optically active **epichlorohydrin**)

IT 1310-73-2, Sodium hydroxide, uses
 1643-19-2, Tetra-n-butylammonium bromide
 RL: USES (Uses)
 (in etherification of hydroxyphenylacetamide by **epichlorohydrin**)

IT 56-93-9, Benzyltrimethylammonium chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in etherification of hydroxyphenylacetamide by **epichlorohydrin**)

IT 56715-12-9P 136259-70-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and ring cleavage of, by isopropylamine)

IT 56715-13-0P, (R)-(+)-**Atenolol** 93379-54-5P,
 (S)-(-)-**Atenolol**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

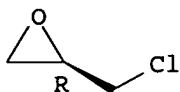
IT 75-31-0, Isopropylamine, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (ring cleavage by, of glycidyloxyphenylacetamide)

IT 51594-55-9, (R)-(-)-**Epichlorohydrin**, reactions
 67843-74-7, (S)-(+)-**Epichlorohydrin**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification by, of hydroxyphenylacetamide)

RN 51594-55-9 HCAPLUS

CN Oxirane, (chloromethyl)-, (2R)- (9CI) (CA INDEX NAME)

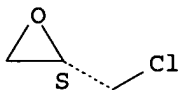
Absolute stereochemistry. Rotation (-).



RN 67843-74-7 HCAPLUS

CN Oxirane, (chloromethyl)-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



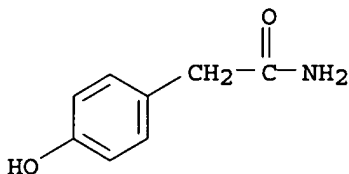
IT 17194-82-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(etherification of, by optically active **epichlorohydrin**)

RN 17194-82-0 HCAPLUS

CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



IT 1310-73-2, Sodium hydroxide, uses

1643-19-2, Tetra-n-butylammonium bromide

RL: USES (Uses)

(in etherification of hydroxyphenylacetamide by **epichlorohydrin**)

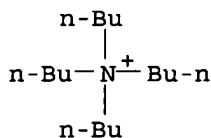
RN 1310-73-2 HCAPLUS

CN Sodium hydroxide (Na(OH)) (9CI) (CA INDEX NAME)

Na-OH

RN 1643-19-2 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, bromide (9CI) (CA INDEX NAME)



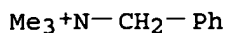
● Br⁻

IT 56-93-9, Benzyltrimethylammonium chloride

RL: RCT (Reactant); RACT (Reactant or reagent)
(in etherification of hydroxyphenylacetamide by epichlorohydrin)

RN 56-93-9 HCAPLUS

CN Benzenemethanaminium, N,N,N-trimethyl-, chloride (9CI) (CA INDEX NAME)



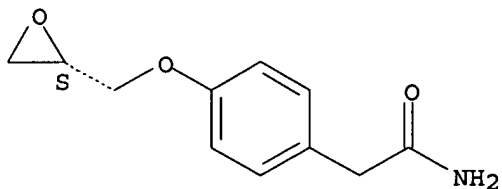
IT 56715-12-9P 136259-70-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and ring cleavage of, by isopropylamine)

RN 56715-12-9 HCAPLUS

CN Benzeneacetamide, 4-[(2S)-oxiranylmethoxy]- (9CI) (CA INDEX NAME)

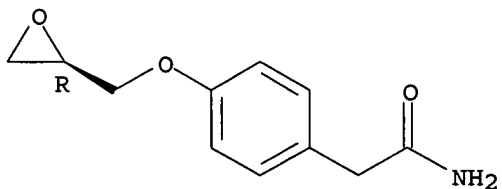
Absolute stereochemistry. Rotation (+).



RN 136259-70-6 HCAPLUS

CN Benzeneacetamide, 4-(oxiranylmethoxy)-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



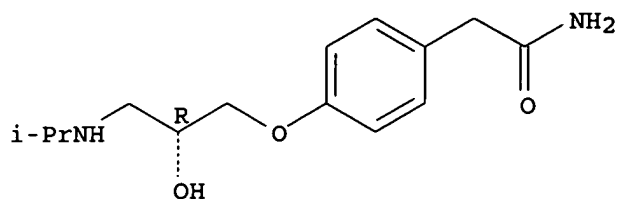
IT 56715-13-0P, (R)-(+)-Atenolol 93379-54-5P,
(S)-(-)-Atenolol

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 56715-13-0 HCAPLUS

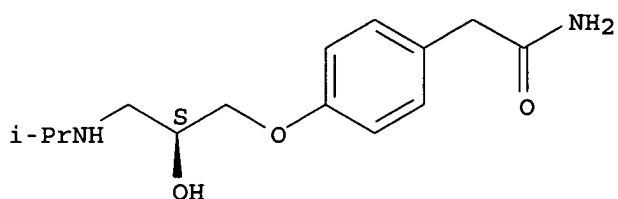
CN Benzeneacetamide, 4-[(2R)-2-hydroxy-3-[(1-methylethyl)amino]propoxy]-
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 93379-54-5 HCAPLUS
 CN Benzeneacetamide, 4-[(2S)-2-hydroxy-3-[(1-methylethyl)amino]propoxy]-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L57 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1991:558739 HCAPLUS
 DN 115:158739
 ED Entered STN: 18 Oct 1991
 TI Manufacture of optically active **atenolol** and its intermediates
 IN Takehira, Kiwa
 PA Daiso Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07C235-34
 ICS C07D301-28; C07D303-22
 ICA C07B053-00
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 1

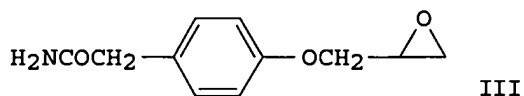
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03077856	A2	19910403	JP 1989-213148	19890818
	JP 06037449	B4	19940518		
PRAI	JP 1989-213148		19890818		

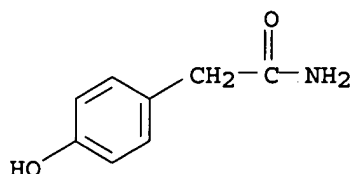
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 03077856	ICM	C07C235-34
	ICS	C07D301-28; C07D303-22
	ICA	C07B053-00

OS CASREACT 115:158739
 GI



- AB Title compound (I), useful for antihypertensives, is prepared by treating p-hydroxyphenylacetamide (II) with optically active **epichlorohydrin** in a water-containing solvent in the presence of 1-1.5 equivalent alkali metal hydroxide per 1 equivalent **epichlorohydrin** at 0-45° to give III, for example, in pharmacol. active S-form, recrystg. III from an organic solvent if necessary, and treating III with isopropylamine. Thus, treating II with R-(-)-**epichlorohydrin** in aqueous NaOH at 3° to room temperature gave 64% S-(+)-III, which was refluxed with isopropylamine in MeOH to give 89% S-(-)-**atenolol** with optical purity 93%. The purity was improved to 98.3% when S-(+)-III was recrystd. from MeOH before the reaction with isopropylamine.
- ST optically active **atenolol** antihypertensive manuf;
epichlorohydrin hydroxyphenylacetamide etherification;
 isopropylamine addn hydroxyphenylacetamide glycidyl ether
- IT Antihypertensives
 (atenolol, intermediate for, optically active
 hydroxyphenylacetamide glycidyl ether as)
- IT Etherification
 (hydroxyphenylacetamide with optically active **epichlorohydrin**
)
- IT Addition reaction
 (of optically active hydroxyphenylacetamide glycidyl ether with
 isopropylamine)
- IT 75-31-0, Isopropylamine, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition of, with optically active hydroxyphenylacetamide glycidyl ether)
- IT 17194-82-0, p-Hydroxyphenylacetamide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification of, with optically active **epichlorohydrin**)
- IT 51594-55-9, R-(-)-**Epichlorohydrin**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification with, of hydroxyphenylacetamide)
- IT 67843-74-7, S-(+)-**Epichlorohydrin**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification with, of hydroxyphenylacetamide)
- IT 56715-12-9P 136259-70-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and addition of, with isopropylamine)
- IT 56715-13-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
- IT 93379-54-5P, S-(-)-**Atenolol**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, for antihypertensive)
- IT 17194-82-0, p-Hydroxyphenylacetamide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification of, with optically active **epichlorohydrin**)
- RN 17194-82-0 HCAPLUS
- CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



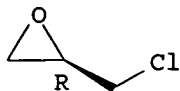
- IT 51594-55-9, R-(-)-**Epichlorohydrin**, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification with, of hydroxyphenylacetamide)

RN 51594-55-9 HCAPLUS

CN Oxirane, (chloromethyl)-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



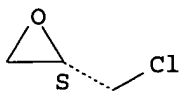
IT 67843-74-7, S-(+)-Epichlorohydrin, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification with, of hydroxyphenylacetamide)

RN 67843-74-7 HCAPLUS

CN Oxirane, (chloromethyl)-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



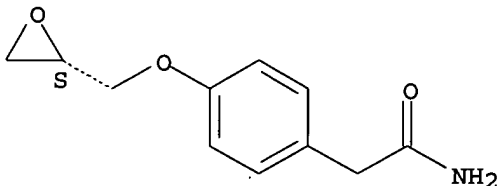
IT 56715-12-9P 136259-70-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and addition of, with isopropylamine)

RN 56715-12-9 HCAPLUS

CN Benzeneacetamide, 4-[(2S)-oxiranylmethoxy]- (9CI) (CA INDEX NAME)

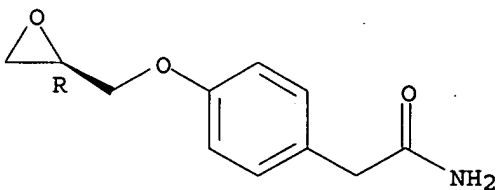
Absolute stereochemistry. Rotation (+).



RN 136259-70-6 HCAPLUS

CN Benzeneacetamide, 4-(oxiranylmethoxy)-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



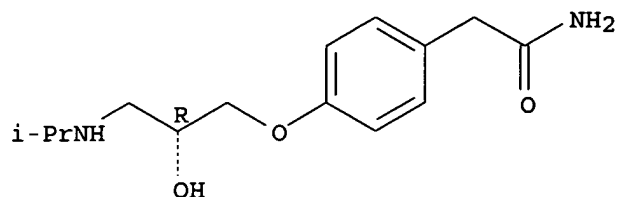
IT 56715-13-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 56715-13-0 HCAPLUS

CN Benzeneacetamide, 4-[(2R)-2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



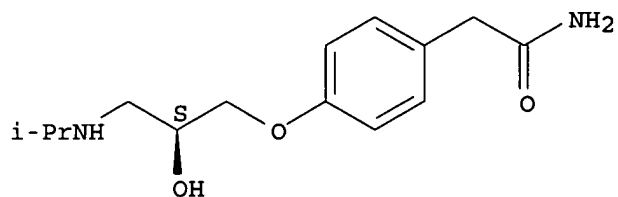
IT 93379-54-5P, S-(-)-Atenolol

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, for antihypertensive)

RN 93379-54-5 HCAPLUS

CN Benzeneacetamide, 4-[(2S)-2-hydroxy-3-[(1-methylethyl)amino]propoxy]-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L57 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1991:558705 HCAPLUS

DN 115:158705

ED Entered STN: 18 Oct 1991

TI Process for producing optically active **atenolol** and intermediate thereof

IN Takehira, Yoshikazu; Saragai, Nobuaki; Kitaori, Kazuhiro

PA Daiso Co., Ltd., Japan

SO Eur. Pat. Appl., 14 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C07C231-18

ICS C07C235-34

ICA C07D303-23

CC 25-7 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

FAN.CNT 1

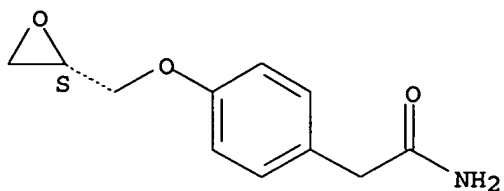
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 435068	A2	19910703	EP 1990-123904	19901212
	EP 435068	A3	19911113		
	EP 435068	B1	19950329		
	R: CH, DE, ES, FR, GB, IT, LI				
	JP 03200753	A2	19910902	JP 1989-344447	19891227
	JP 06074243	B4	19940921		
	US 5130482	A	19920714	US 1990-624302	19901207
	CA 2032098	AA	19910628	CA 1990-2032098	19901212
	CA 2032098	C	19980414		
	EP 605384	A1	19940706	EP 1994-100873	19901212
	EP 605384	B1	19960327		
	R: CH, DE, ES, FR, GB, IT, LI				
	ES 2072960	T3	19950801	ES 1990-123904	19901212

	ES 2088299	T3	19960801	ES 1994-100873	19901212
	CA 2157938	C	19980714	CA 1990-2157938	19901212
	US 5223646	A	19930629	US 1992-871743	19920421
PRAI	JP 1989-344447	A	19891227		
	US 1990-624302	A3	19901207		
	CA 1990-2032098	A3	19901212		
	EP 1990-123904	A3	19901212		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 435068	ICM	C07C231-18
	ICS	C07C235-34
	ICA	C07D303-23
EP 435068	ECLA	C07C231/18; C07D303/22B
EP 605384	ECLA	C07C231/20; C07C235/46
OS	CASREACT	115:158705; MARPAT 115:158705
AB	(R)- And (S)- atenolol , p-H ₂ NCOCH ₂ C ₆ H ₄ OCH ₂ CH(OH)CH ₂ NHCHMe ₂ (I) were prepared by treating p-H ₂ NCOCH ₂ C ₆ H ₄ OH with (R)- and (S)- epichlorohydrin followed by treatment of the glycidyl ether with Me ₂ CHNH ₂ . Thus, p-H ₂ NCOCH ₂ C ₆ H ₄ OH was treated with (R)-(-)- epichlorohydrin in H ₂ O containing NaOH to give the (S)-(+)-glycidyl ether (64%), which was treated with Me ₂ CHNH ₂ in MeOH to give 89% (S)-(-)-I with 93% ee. I were purified via acid salts.	
ST	atenolol prepn; glycidyl ether atenolol intermediate	
IT	136259-68-2P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and neutralization of)	
IT	56715-12-9P 136259-70-6P 136259-71-7P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and reaction of, with isopropylamine)	
IT	136259-67-1P 136259-69-3P 136259-72-8P 136259-73-9P 136259-74-0P 136259-75-1P 136259-76-2P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)	
IT	56715-13-0P, (R)-(+)- Atenolol 93379-54-5P, (S)-(-)- Atenolol RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, improved process for)	
IT	51594-55-9, (R)-(-)- Epichlorohydrin , reactions 67843-74-7, (S)-(+)- Epichlorohydrin , reactions RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with (hydroxyphenyl)acetamide)	
IT	17194-82-0 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with epichlorohydrins)	
IT	75-31-0, Isopropylamine, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with glycidic ethers, in synthesis of atenolol)	
IT	56715-12-9P 136259-70-6P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and reaction of, with isopropylamine)	
RN	56715-12-9 HCAPLUS	
CN	Benzeneacetamide, 4-[(2S)-oxiranylmethoxy]- (9CI) (CA INDEX NAME)	

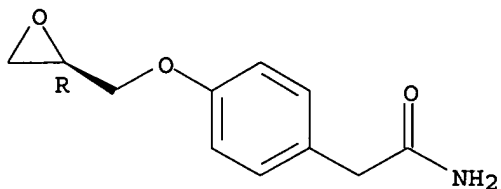
Absolute stereochemistry. Rotation (+).



RN 136259-70-6 HCAPLUS

CN Benzeneacetamide, 4-(oxiranylmethoxy)-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 136259-74-0P 136259-76-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 136259-74-0 HCAPLUS

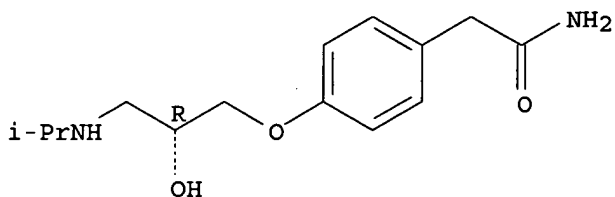
CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)aminopropoxy]-, (R)-,
mono(4-methylbenzenesulfonate) (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 56715-13-0

CMF C14 H22 N2 O3

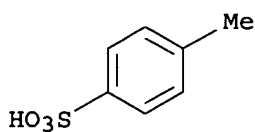
Absolute stereochemistry. Rotation (+).



CM 2

CRN 104-15-4

CMF C7 H8 O3 S

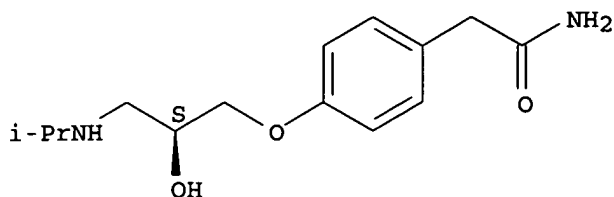


RN 136259-76-2 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)aminopropoxy]-,

monohydrochloride, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



● HCl

IT 56715-13-0P, (R)-(+)-Atenolol 93379-54-5P,

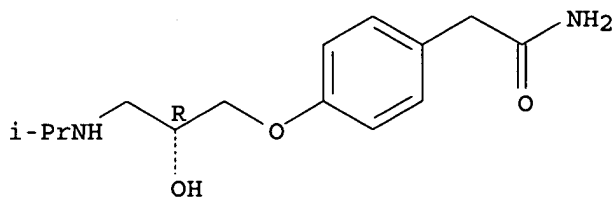
(S)-(-)-Atenolol

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, improved process for)

RN 56715-13-0 HCAPLUS

CN Benzeneacetamide, 4-[(2R)-2-hydroxy-3-[(1-methylethyl)amino]propoxy] -
(9CI) (CA INDEX NAME)

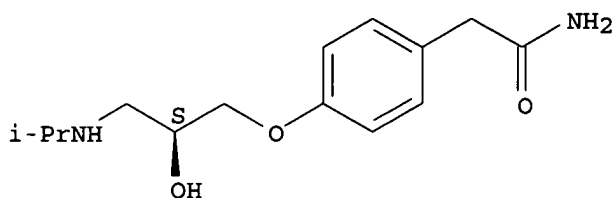
Absolute stereochemistry. Rotation (+).



RN 93379-54-5 HCAPLUS

CN Benzeneacetamide, 4-[(2S)-2-hydroxy-3-[(1-methylethyl)amino]propoxy] -
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 51594-55-9, (R)-(-)-Epichlorohydrin, reactions

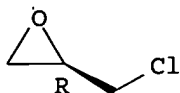
67843-74-7, (S)-(+)-Epichlorohydrin, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (hydroxyphenyl)acetamide)

RN 51594-55-9 HCAPLUS

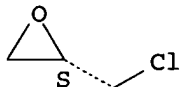
CN Oxirane, (chloromethyl)-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

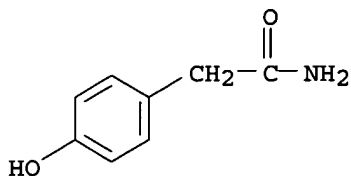


RN 67843-74-7 HCAPLUS
 CN Oxirane, (chloromethyl)-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT 17194-82-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with epichlorohydrins)
 RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



L57 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1991:84283 HCAPLUS
 DN 114:84283
 ED Entered STN: 09 Mar 1991
 TI Process for amino alcohol preparation
 IN Torres Esteban, Josep Maria; Cuixart Grande, Jesus Maria; Campon Pardo, Julio; Ribalta Baro, Miguel
 PA Sintenovo S. A., Spain; Mefar S. A.
 SO Span., 4 pp.
 CODEN: SPXXAD
 DT Patent
 LA Spanish
 IC ICM C07C089-02
 ICS C07C091-08
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI ES 2006944	A6	19890516	ES 1988-1514	19880516
PRAI ES 1988-1514		19880516		

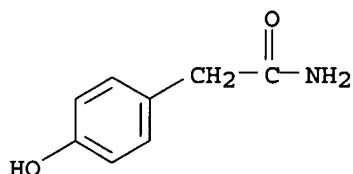
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
ES 2006944	ICM	C07C089-02
	ICS	C07C091-08

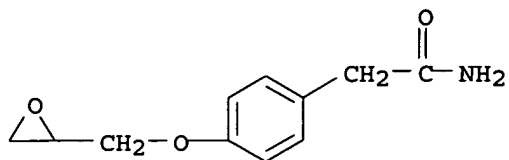
AB The title process for preparing 1-(4-carbamoylmethylphenoxy)-3-isopropylamino-2-propanol comprises reacting phenol with glyoxylic acid at 60° to 4-hydroxymandelic acid, reducing with hydroiodic acid to 4-hydroxyphenylacetic acid, esterifying and aminating to 4-hydroxyphenylactamide, reacting with epichlorohydrin to

1-(4-carbamoylmethylphenoxy)-2,3-epoxypropane and 1-(4-carbamoylmethylphenoxy)-3-chloro-2-propanol, and reacting with isopropylamine.

- ST amino alc prepn; carbamoylmethylphenoxyisopropylaminopropanol prepn
 IT Alcohols, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (amino, preparation of)
 IT 156-38-7P, 4-Hydroxyphenylacetic acid
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and esterification and amination of)
 IT 17194-82-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with epichlorohydrin)
 IT 29122-69-8P 115538-83-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with isopropylamine)
 IT 1198-84-1P, 4-Hydroxymandelic acid
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reduction of, by hydroiodic acid)
 IT 29122-68-7P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of)
 IT 75-31-0, Isopropylamine, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with carbamoylmethylphenoxypropane derivative)
 IT 108-95-2, Phenol, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with glyoxylic acid)
 IT 106-89-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with hydroxyphenylactamide)
 IT 298-12-4, Glyoxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with phenol)
 IT 10034-85-2, Hydroiodic acid
 RL: USES (Uses)
 (reductant, for hydroxymandelic acid)
 IT 17194-82-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with epichlorohydrin)
 RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



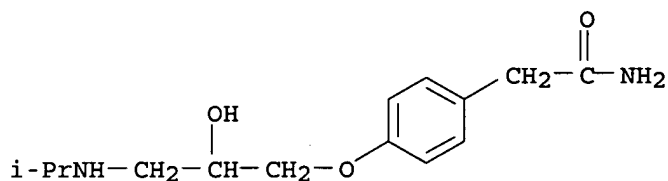
- IT 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with isopropylamine)
 RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



IT 29122-68-7P

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

RN 29122-68-7 HCAPLUS

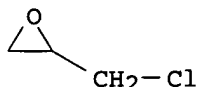
CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy] - (9CI)
(CA INDEX NAME)

IT 106-89-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydroxyphenylacetamide)

RN 106-89-8 HCAPLUS

CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



L57 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1989:594562 HCAPLUS

DN 111:194562

ED Entered STN: 25 Nov 1989

TI Preparation of aromatic epoxides as intermediates for β -adrenergic blockers

IN Maehara, Kyoshi; Koshigoe, Taichi; Aoki, Shigeru; Tomyoshi, Noriko; Nagao, Susumu

PA Nippon Kayaku Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07D303-22

ICS B01J031-02; C07D301-00

ICA C07B061-00

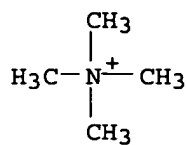
CC 27-2 (Heterocyclic Compounds (One Hetero Atom))

Section cross-reference(s): 1

FAN.CNT 1

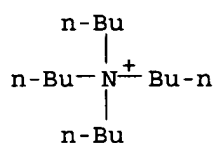
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01102072	A2	19890419	JP 1987-259481	19871016
PRAI	JP 1987-259481		19871016		
CLASS					

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01102072	ICM	C07D303-22
	ICS	B01J031-02; C07D301-00
	ICA	C07B061-00
OS	MARPAT 111:194562	
AB	<p>The title compds. AroX (Ar = aryl; X = glycidyl), useful as intermediate for atenolol, etc., are prepared by treating AroH with epichlorohydrin in the presence of phase-transfer catalyst RR13N+ X- (R = benzyl, C1-8 alkyl; R1 = C1-4 alkyl; X = halo, sulfate) and then ending the reaction by addition of alkali hydroxides. A mixture of p-hydroxyphenylacetamide, Bu4NBr, and epichlorohydrin was heated at 65-66° for 1 h and treated with KOH-MeOH at 70-72° for 1 h to give 88.5% p-carbamoylmethylphenoxy-2,3-epoxypropane (I), vs., 65.4% using piperidine instead of Bu4NBr. I was treated with isopropylamine in MeOH at 45-50° for 1 h to give atenolol (total yield 75%).</p>	
ST	arom epoxide intermediate adrenergic blocker; oxirane prepn intermediate adrenergic blocker	
IT	Epoxides	
	RL: SPN (Synthetic preparation); PREP (Preparation) (aryl, preparation of, as intermediates for β -adrenergic blockers)	
IT	Etherification catalysts (phase-transfer, quaternary ammonium salts, for aromatic alcs. with epichlorohydrin)	
IT	Quaternary ammonium compounds, uses and miscellaneous RL: CAT (Catalyst use); USES (Uses) (tetraalkyl, halides, phase-transfer catalysts, for etherification of aromatic alcs. with epichlorohydrin)	
IT	Adrenergic antagonists (β -, intermediates for, aromatic epoxides as)	
IT	75-57-0, Tetramethylammonium chloride 1643-19-2, Tetrabutylammonium bromide RL: CAT (Catalyst use); USES (Uses) (catalysts, for etherification of aromatic alcs. with epichlorohydrin)	
IT	106-89-8, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (etherification by, of aromatic alcs.)	
IT	17194-82-0, p-Hydroxyphenylacetamide 56718-71-9 RL: RCT (Reactant); RACT (Reactant or reagent) (etherification of, with epichlorohydrin)	
IT	29122-69-8P, 1-p-Carbamoylmethylphenoxy-2,3-epoxypropane 56718-70-8P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, as intermediate for β -adrenergic blockers)	
IT	29122-68-7P, Atenolol 56392-18-8P, Metoprolol hydrochloride RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, as β -adrenergic blocker, aromatic epoxides as intermediates for)	
IT	75-57-0, Tetramethylammonium chloride 1643-19-2, Tetrabutylammonium bromide RL: CAT (Catalyst use); USES (Uses) (catalysts, for etherification of aromatic alcs. with epichlorohydrin)	
RN	75-57-0 HCAPLUS	
CN	Methanaminium, N,N,N-trimethyl-, chloride (9CI) (CA INDEX NAME)	



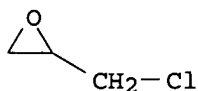
● Cl⁻

RN 1643-19-2 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, bromide (9CI) (CA INDEX NAME)

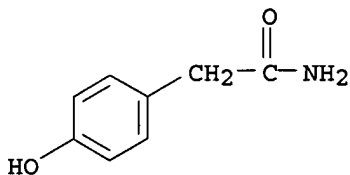


● Br⁻

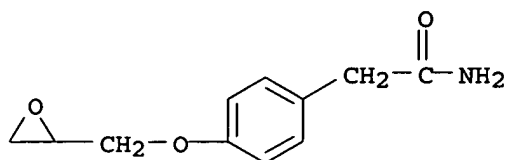
IT 106-89-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification by, of aromatic alcs.)
RN 106-89-8 HCAPLUS
CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



IT 17194-82-0, p-Hydroxyphenylacetamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification of, with epichlorohydrin)
RN 17194-82-0 HCAPLUS
CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



IT 29122-69-8P, 1-p-Carbamoylmethylphenoxy-2,3-epoxypropane
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for β-adrenergic blockers)
RN 29122-69-8 HCAPLUS
CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)

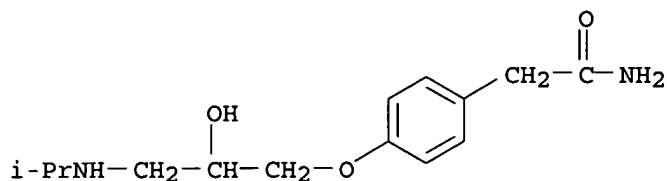


IT 29122-68-7P, Atenolol

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as β -adrenergic blocker, aromatic epoxides as intermediates for)

RN 29122-68-7 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy] - (9CI)
(CA INDEX NAME)



L57 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1987:439429 HCAPLUS

DN 107:39429

ED Entered STN: 08 Aug 1987

TI Process for the preparation of (carbamoylmethylphenoxy)isopropanolamines
useful as cardiac β -blockers

IN Torres Esteban, Josep Maria; Cuixart Grande, Jesus Maria; Juste Sese,
Rafael

PA Juste S. A. Quimico-Farmaceutica, Spain

SO Span., 10 pp.

CODEN: SPXXAD

DT Patent

LA Spanish

IC ICM C07C089-02

ICS C07C091-04; A61K031-13

CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 1

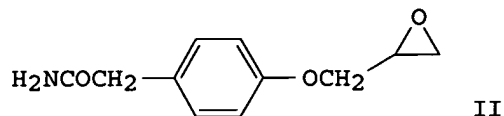
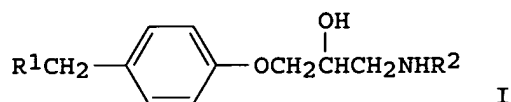
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	ES 539244	A1	19860601	ES 1984-539244	19841229
PRAI	ES 1984-539244		19841229		

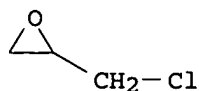
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
ES 539244	ICM	C07C089-02
	ICS	C07C091-04; A61K031-13

GI



- AB The title compds. [I; R1 = (un)substituted CONH2; R2 = H, Me, Et, Pr, CHMe2, CMe3, etc.], useful as cardiac β -blockers, are prepared Thus, amidation of HO2CCH2C6H4OH-4 via the acid chloride gave 86-88% H2NCOCH2C6H4OH-4, which was alkylated by **epichlorohydrin** in EtOH containing NaOH to give (carbamoylmethylphenoxy)epoxypropane II. Aminolysis of II by Me2CHNH2 in H2O at 70° gave I (R1 = CONH2, R2 = CHMe2; i.e. **atenolol**).
- ST carbamoylmethylphenoxyisopropanolamine prepn beta blocker; phenoxyisopropanolamine carbamoylmethyl prepn beta blocker; isopropanolamine carbamoylmethylphenoxy prepn beta blocker; **atenolol**
- IT 106-89-8, **Epichlorohydrin**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation by, of hydroxyphenylacetamide)
- IT 156-38-7, p-Hydroxyphenylacetic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation of, via acid chloride)
- IT 75-31-0, Isopropylamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aminolysis by, of (carbamoylmethylphenoxy)epoxypropane)
- IT 17194-82-0P, p-Hydroxyphenylacetamide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation of, by **epichlorohydrin**)
- IT 37859-23-7P, p-Hydroxyphenylacetyl chloride
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and amidation of)
- IT 29122-69-8P, 1-(p-Carbamoylmethylphenoxy)-2,3-epoxypropane
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and aminolysis of)
- IT 29122-68-7P, **Atenolol**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, from hydroxyphenylacetic acid)
- IT 106-89-8, **Epichlorohydrin**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation by, of hydroxyphenylacetamide)
- RN 106-89-8 HCAPLUS
- CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)

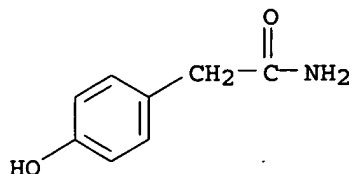


- IT 17194-82-0P, p-Hydroxyphenylacetamide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and alkylation of, by epichlorohydrin)

RN 17194-82-0 HCAPLUS

CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



IT 29122-69-8P, 1-(p-Carbamoylmethylphenoxy)-2,3-epoxypropane

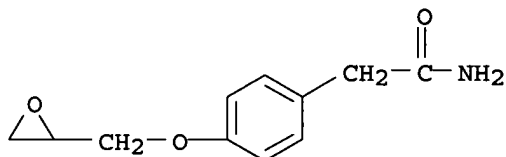
RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

(preparation and aminolysis of)

RN 29122-69-8 HCAPLUS

CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)

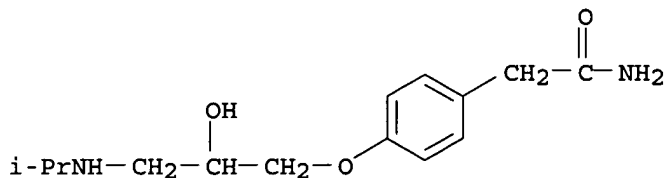


IT 29122-68-7P, Atenolol

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, from hydroxyphenylacetic acid)

RN 29122-68-7 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI)
(CA INDEX NAME)

L57 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1983:504960 HCAPLUS

DN 99:104960

ED Entered STN: 12 May 1984

TI 2-[P-[2-Hydroxy-3-(isopropylamino)propoxy]phenyl]acetamide

IN Vallas Rodoreda, Enrique

PA Spain

SO Span., 7 pp.

CODEN: SPXXAD

DT Patent

LA Spanish

IC C07C103-26; A61K031-165

CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

FAN.CNT 1

PATENT NO.

KIND

DATE

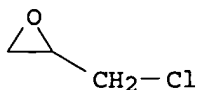
APPLICATION NO.

DATE

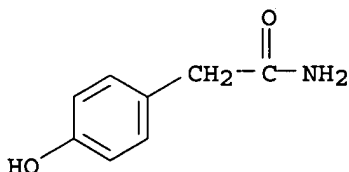
PI ES 509814 A1 19830201 ES 1982-509814 19820223
 PRAI ES 1982-509814 19820223
 CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

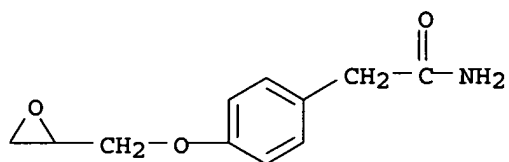
ES 509814 IC C07C103-26IC A61K031-165
 AB The title compound (I) was prepared from 4-HOC6H4CH2CONH2 (II); I is useful as a β -adrenergic blocking agent (no data). II was treated with epichlorohydrin and K2CO3 to yield a glycidyl ether, and the product was heated with Me2CHNH2 in Et2O to give I.
 ST phenoxyisopropanolamine prepn adrenergic blocker
 IT Sympatholytics
 (β -, phenoxyisopropanolamine derivative)
 IT 106-89-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification by, of phenol derivative)
 IT 17194-82-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification of, by epichlorohydrin)
 IT 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and ring cleavage of, by isopropylamine)
 IT 29122-68-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT 75-31-0, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (ring cleavage by, of glycidyl (carbamoylmethyl)phenyl ether)
 IT 106-89-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification by, of phenol derivative)
 RN 106-89-8 HCAPLUS
 CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



IT 17194-82-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (etherification of, by epichlorohydrin)
 RN 17194-82-0 HCAPLUS
 CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



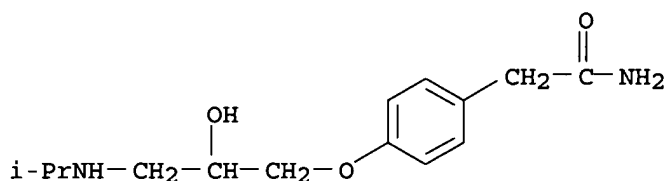
IT 29122-69-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and ring cleavage of, by isopropylamine)
 RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



IT 29122-68-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 29122-68-7 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy] - (9CI)
(CA INDEX NAME)

L57 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1982:154993 HCAPLUS

DN 96:154993

ED Entered STN: 12 May 1984

TI Studies on the metabolism of **atenolol**. Characterization and
determination of a new urinary metabolite in the rat

AU Matsuki, Yasuhiko; Ito, Tomiharu; Komatsu, Sakae; Nambara, Toshio

CS Food Drug Saf. Cent., Hatano Res. Inst., Kanagawa, 257, Japan

SO Chemical & Pharmaceutical Bulletin (1982), 30(1), 196-201

CODEN: CPBTAL; ISSN: 0009-2363

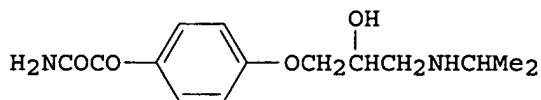
DT Journal

LA English

CC 1-2 (Pharmacology)

Section cross-reference(s) : 25

GI



I

AB A new urinary metabolite of **atenolol** [29122-68-7] in the rat was characterized and isolated. The metabolite, 4-(2-hydroxy-3-isopropylaminopropoxy)phenylglyoxylic acid amide (I) [74908-93-3], represented 1.04% of the total dose of **atenolol** administered. A gas chromatog. method for the determination of I in urine is presented.

ST **atenolol** metabolite urine; gas chromatog **atenolol** metabolite urine

IT Urine analysis

(atenolol metabolite determination in, by gas chromatog.)

IT **29122-68-7**
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (metabolism of, urinary metabolite determination in)

IT 68758-68-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidation of)

IT 70080-54-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and amidation of)

IT 74908-93-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and determination of, in urine, as **atenolol** metabolite)

IT 81346-71-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction with acetone)

IT 81346-70-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction with isopropylamine)

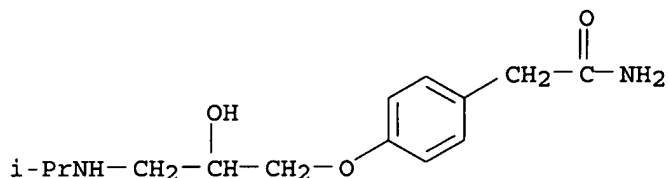
IT **29122-69-8P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reductive amination of)

IT 81346-72-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

IT **17194-82-0** 81346-69-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with **epichlorohydrin**)

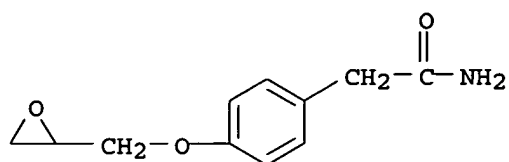
IT **29122-68-7**
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (metabolism of, urinary metabolite determination in)

RN 29122-68-7 HCAPLUS
 CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI)
 (CA INDEX NAME)



IT **29122-69-8P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reductive amination of)

RN 29122-69-8 HCAPLUS
 CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)

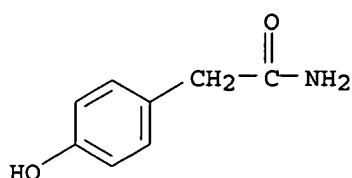


IT 17194-82-0

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **epichlorohydrin**)

RN 17194-82-0 HCAPLUS

CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



L57 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1980:180847 HCAPLUS

DN 92:180847

ED Entered STN: 12 May 1984

TI p-Hydroxybenzyl cyanide and p-(2-hydroxy-3-isopropylaminopropoxy)phenylacetamide

PA Imperial Chemical Industries Ltd., UK

SO Jpn. Kokai Tokkyo Koho, 2 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C07C103-26; C07C121-75; C07C102-00; C07C120-00

CC 25-20 (Noncondensed Aromatic Compounds)

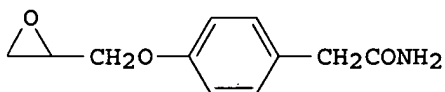
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 54148744	A2	19791121	JP 1978-57487	19780515
PRAI	JP 1978-57487	A	19780515		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 54148744	IC	C07C103-26IC C07C121-75IC C07C102-00IC C07C120-00

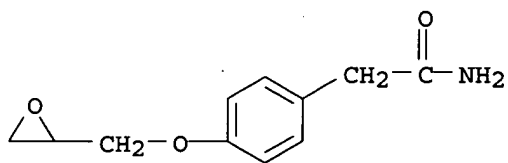
GI



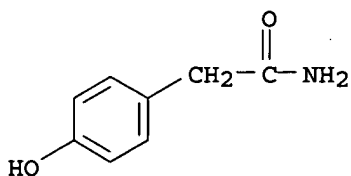
III

AB p-HOC₆H₄CH₂CN (I) was prepared by treating p-HOC₆H₄CH(NH₂)CO₂H (II) with alkali metal cyanides in DMF, Me₂SO, or 2-pyrrolidone at 120-190°. Hydrolyzing I gave p-HOC₆H₄CH₂CONH₂, which was treated with **epichlorohydrin** to give III. Aminating III with Me₂CHNH₂ gave p-Me₂CHNHCH₂CH(OH)CH₂OC₆H₄CH₂CONH₂. Thus, heating 10 g II, NaCN,

- NaOH, and DMF 1 h at 130° gave 80% I.
- ST hydroxybenzyl cyanide; hydroxyisopropylaminopropoxyphenylacetamide;
acetamide hydroxyisopropylaminopropoxyphenyl; cyanation phenylglycine;
glycine phenyl cyanation
- IT Cyanation
(of phenylglycine, phenylacetonitrile from)
- IT 143-33-9 151-50-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyanation of phenylglycine by, phenylacetonitrile from)
- IT 938-97-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyanation of, hydroxyphenylacetonitrile from)
- IT 29122-69-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and amination of)
- IT 14191-95-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and hydrolysis of)
- IT 17194-82-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and reaction with epichlorohydrin)
- IT 29122-68-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
- IT 106-89-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydroxyphenylacetamide)
- IT 29122-69-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and amination of)
- RN 29122-69-8 HCAPLUS
- CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



- IT 17194-82-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and reaction with epichlorohydrin)
- RN 17194-82-0 HCAPLUS
- CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)

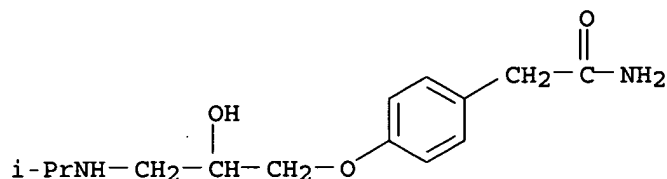


- IT 29122-68-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 29122-68-7 HCAPLUS

CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI)
(CA INDEX NAME)

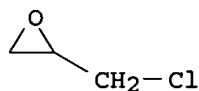


IT 106-89-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydroxyphenylacetamide)

RN 106-89-8 HCAPLUS

CN Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)



L57 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1978:104956 HCAPLUS

DN 88:104956

ED Entered STN: 12 May 1984

TI Phenylacetamide derivative

IN Juste Sese, Rafael

PA Juste S. A. Quimico-Farmaceutica, Spain

SO Span., 7 pp.

CODEN: SPXXAD

DT Patent

LA Spanish

IC C07C

CC 25-19 (Noncondensed Aromatic Compounds)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	ES 449244	A1	19770801	ES 1976-449244	19760625
PRAI	ES 1976-449244	A1	19760625		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
ES 449244	IC	C07C

AB 4-[Me₂CHNHCH₂CH(OH)CH₂O]C₆H₄CH₂CONH₂ (I) was prepared in 4 steps from 4-HOC₆H₄CO₂H, i.e., esterification with MeOH, ammonolysis with aqueous NH₄OH, etherification with **epichlorohydrin**, and cleavage of the oxirane ring with excess (50 mol parts) Me₂CHNH₂. I has β-adrenergic blocking activity and is an antihypertensive agent (no data).

ST phenylacetamide aminohydroxypropoxy; sympatholytic phenylacetamide; antihypertensive phenylacetamide

IT Antihypertensives

(4-[3-(isopropylamino)-2-hydroxypropoxy]phenylacetamide as)

IT Sympatholytics

(β-, 4-[3-(isopropylamino)-2-hydroxypropoxy]phenylacetamide as)

IT 156-38-7

RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with methanol)

IT 14199-15-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and ammonolysis of)

IT 17194-82-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with epichlorohydrin)

IT 29122-69-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with isopropylamine)

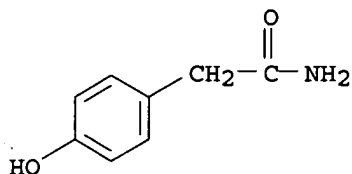
IT 29122-68-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 106-89-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (hydroxyphenyl)acetamide)

IT 75-31-0, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with oxirane derivative)

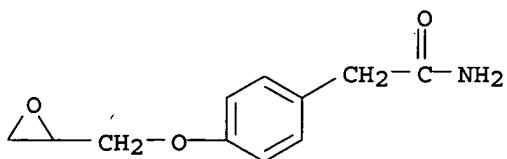
IT 17194-82-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with epichlorohydrin)

RN 17194-82-0 HCAPLUS
CN Benzeneacetamide, 4-hydroxy- (9CI) (CA INDEX NAME)



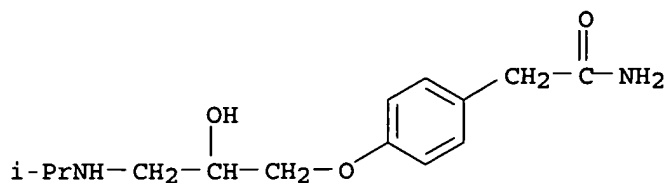
IT 29122-69-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with isopropylamine)

RN 29122-69-8 HCAPLUS
CN Benzeneacetamide, 4-(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



IT 29122-68-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

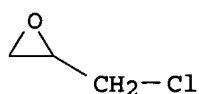
RN 29122-68-7 HCAPLUS
CN Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- (9CI)
(CA INDEX NAME)



```

IT      106-89-8, reactions
        RL: RCT (Reactant); RACT (Reactant or reagent)
           (reaction of, with (hydroxyphenyl)acetamide)
RN      106-89-8 HCAPLUS
CN      Oxirane, (chloromethyl)- (9CI) (CA INDEX NAME)

```



=> => d his

(FILE 'HOME' ENTERED AT 10:17:04 ON 11 JAN 2005)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 10:17:10 ON 11 JAN 2005

```

L1          1 S E3
            E C14H22N2O3/MF
L2          342 S E3 AND 46.150.18/RID AND 1/NR
L3          18 S L2 AND BENZENEACETAMIDE
L4          12 S L3 AND 2 HYDROXY
L5          11 S L4 AND PROPOXY
L6          7 S L5 AND 4
L7          3 S L6 NOT (D/ELS OR 11C#)
L8          3 S L2 AND ATENOLOL
L9          3 S L1,L7,L8
            SEL RN
L10         37 S E1-E3/CRN
L11         10 S L10 NOT (MXS/CI OR COMPD OR WITH)
            E EPICHLOROHYDRIN/CN
L12         1 S E3
            E C3H5CLO/MF
L13         23 S E3 AND OC2/ES
            SEL RN 12 17 23
L14         3 S E1-E3
L15         3 S L12,L14
            E C11H13NO3/MF
L16         55 S E3 AND 46.150.18/RID AND OC2/ES AND 2/NR
L17         17 S L16 AND 4
L18         5 S L17 AND BENZENEACETAMIDE
L19         3 S L18 NOT D/ELS
            E C8H9NO2/MF
L20         392 S E3 AND 46.150.18/RID AND 1/NR
L21         147 S L20 AND 4
L22         1 S L21 AND BENZENEACETAMIDE
L23         9 S L20 AND BENZENEACETAMIDE
L24         2 S (SODIUM HYDROXIDE OR POTASSIUM HYDROXIDE)/CN

```

FILE 'HCAPLUS' ENTERED AT 11:12:24 ON 11 JAN 2005

L25 116 S L22
 L26 15885 S L15
 L27 32010 S EPICHLOROHYDRIN?
 L28 35012 S L26,L27
 L29 58 S L19
 L30 3162 S L9 OR L11
 L31 4161 S ATENOLOL
 L32 4406 S L30,L31
 L33 19 S L25 AND L28 AND L29 AND L32
 L34 6 S L33 AND (L24 OR NAOH OR KOH OR (NA OR K OR SODIUM OR POTASSIU
 L35 1 S L33 AND (QUAT? (L) AMMON?)
 L36 6 S L34,L35
 L37 105 S L30 (L) PREP+NT/RL
 L38 18 S L33 AND L37
 L39 8366 S (L22 OR L28 OR L19) (L) RACT+NT/RL
 L40 920 S (L22 OR L28 OR L19) (L) CAT/RL
 L41 18 S L38 AND L39,L40
 L42 6 S L36 AND L41
 L43 13 S L33-L36,L38,L41 NOT L42
 L44 19 S L42,L43
 SEL RN

FILE 'REGISTRY' ENTERED AT 11:17:17 ON 11 JAN 2005

L45 116 S E1-E116
 L46 1 S L45 AND L22
 L47 3 S L45 AND L15
 L48 3 S L45 AND L19
 L49 5 S L45 AND L9,L11
 L50 104 S L45 NOT L46-L49
 L51 3 S L50 AND IUM
 L52 3 S L50 AND N N N
 L53 3 S L50 AND N N
 L54 3 S L51-L53
 L55 1 S L45 AND L24

FILE 'HCAPLUS' ENTERED AT 11:19:16 ON 11 JAN 2005

L56 2 S L54 AND L44
 L57 19 S L44,L56

FILE 'HCAPLUS' ENTERED AT 11:19:39 ON 11 JAN 2005

E MEHTA S/AU
 L58 189 S E3,E18
 L59 2 S E51
 E SATISH/AU
 L60 1 S E32
 E RAMANLAL/AU
 E BHAWAL B/AU
 L61 84 S E3,E4,E8,E9
 E BABURAO/AU
 E MANIKROA/AU
 E DESHPANDE/AU
 E DESHPANDE V/AU
 L62 77 S E3,E8
 E DESHPANDE VISH/AU
 L63 22 S E4,E5
 E VISHNU/AU
 L64 58 S E3
 E HARI/AU
 L65 2 S E26
 L66 27 S E121
 E GURJAR /AU
 L67 123 S E22-E25
 E MUKUND/AU

L68 1 S E5
E KESHAV/AU
L69 586 S L58-L68
L70 0 S L69 AND L32
L71 41 S L69 AND P/DT
L72 7 S L69 AND L22,L15,L19
L73 5 S L71 AND L72
L74 2 S L72 NOT L73
L75 0 S L58-L60 AND L61-L68
L76 0 S L61 AND L62-L68
L77 0 S L62-L66 AND L67,L68
E IN2003-1148/AP,PRN
E IN2003-MU1148/AP,PRN
E IN2003-MUM1148/AP,PRN
SET COST ON

=>

***** STN Columbus *****

FILE 'HOME' ENTERED AT 08:53:58 ON 11 JAN 2005

=> file casreact
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
0.21	0.21

FILE 'CASREACT' ENTERED AT 08:54:22 ON 11 JAN 2005
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications.

FILE CONTENT:1840 - 9 Jan 2005 VOL 142 ISS 2

*
* CASREACT now has more than 8 million reactions *
*

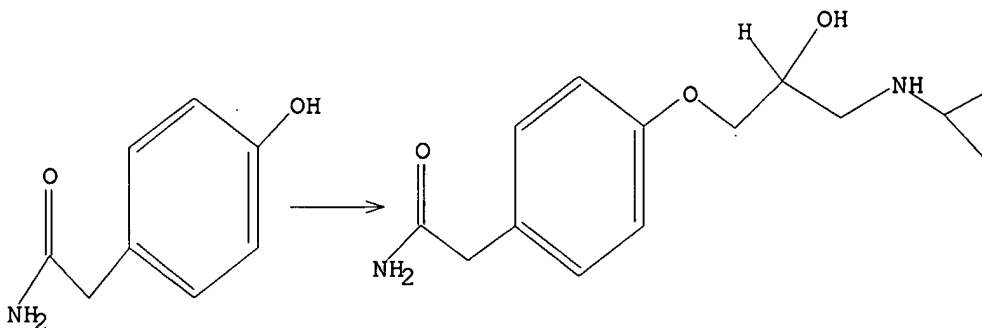
Some CASREACT records are derived from the ZIC/VINITI database (1974-1991) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=>
Uploading C:\STNEXP4\10701902.str

L1 STRUCTURE UPLOADED

=> d
L1 HAS NO ANSWERS
L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1
SAMPLE SEARCH INITIATED 08:54:44 FILE 'CASREACT'
SCREENING COMPLETE - 3 REACTIONS TO VERIFY FROM 1 DOCUMENTS

100.0% DONE 3 VERIFIED 0 HIT RXNS 0 DOCS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
 BATCH **COMPLETE**
PROJECTED VERIFICATIONS: 3 TO 163
PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1 (0 REACTIONS)

=> s 11 ful

FULL SEARCH INITIATED 08:54:50 FILE 'CASREACT'

SCREENING COMPLETE - 129 REACTIONS TO VERIFY FROM 28 DOCUMENTS

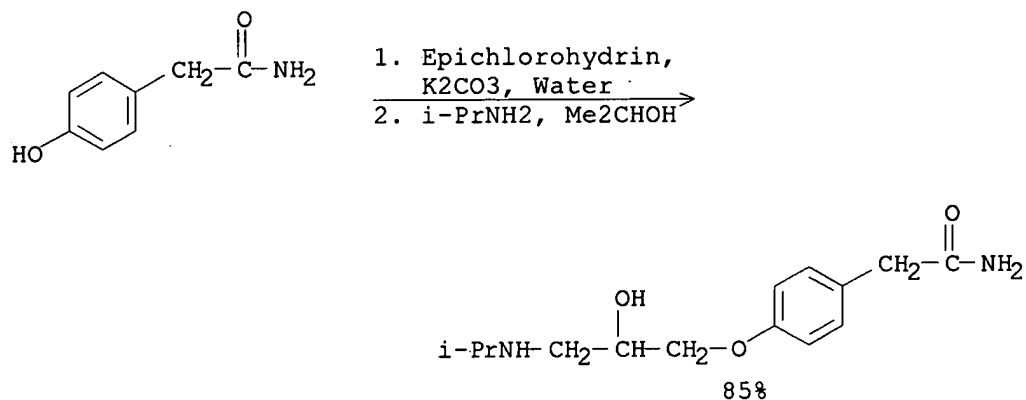
100.0% DONE 129 VERIFIED 11 HIT RXNS 6 DOCS
SEARCH TIME: 00.00.01

L3 6 SEA SSS FUL L1 (11 REACTIONS)

=> d 13 1-6

L3 ANSWER 1 OF 6 CASREACT COPYRIGHT 2005 ACS on STN

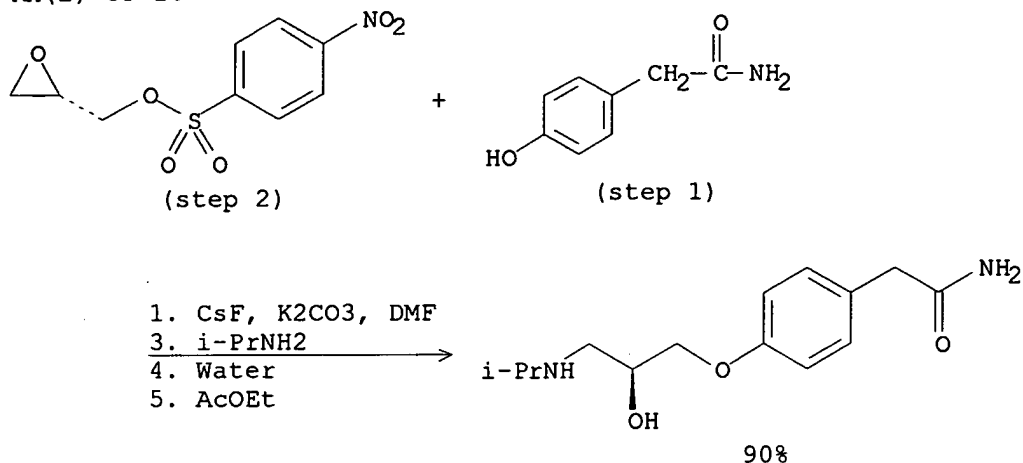
RX(13) OF 28 - 2 STEPS



REF: Huaihai Gongxueyuan Xuebao, 9(2), 36-38; 2000

L3 ANSWER 2 OF 6 CASREACT COPYRIGHT 2005 ACS on STN

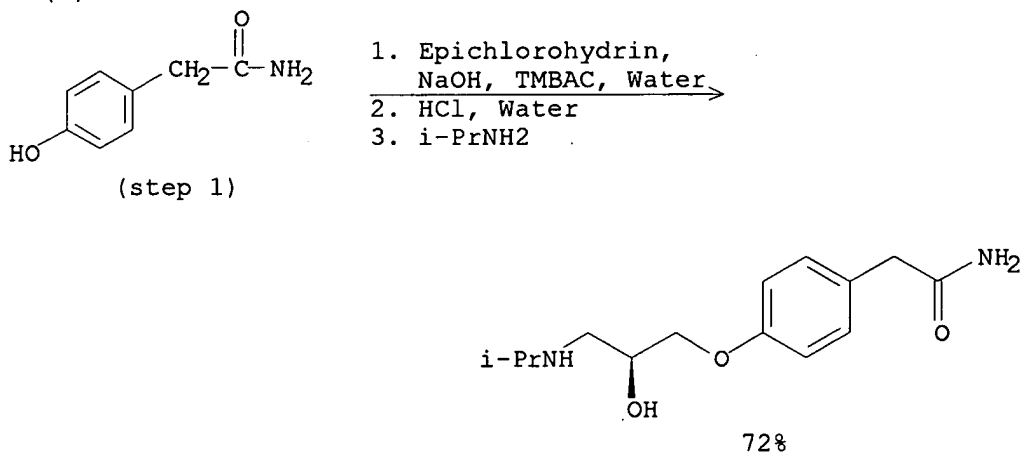
RX(2) OF 20



REF: Tetrahedron, 55(50), 14381-14390; 1999
NOTE: STEREOSELECTIVE

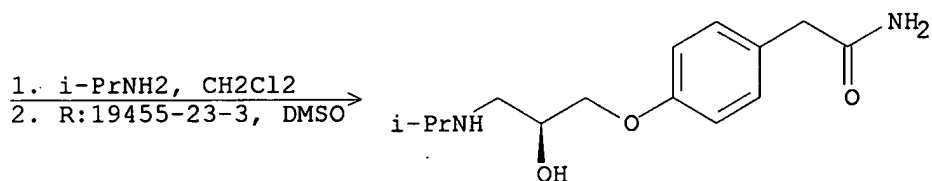
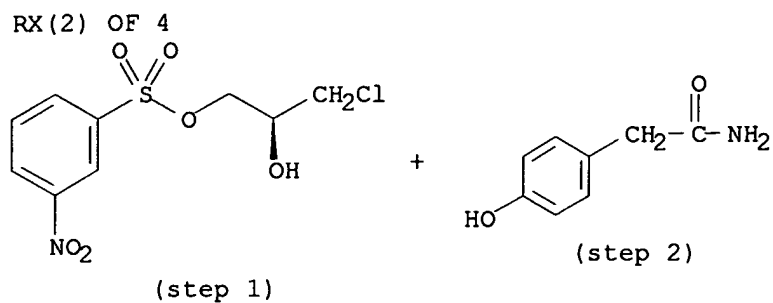
L3 ANSWER 3 OF 6 CASREACT COPYRIGHT 2005 ACS on STN

RX(1) OF 7



REF: Jpn. Kokai Tokkyo Koho, 04198175, 17 Jul 1992, Heisei

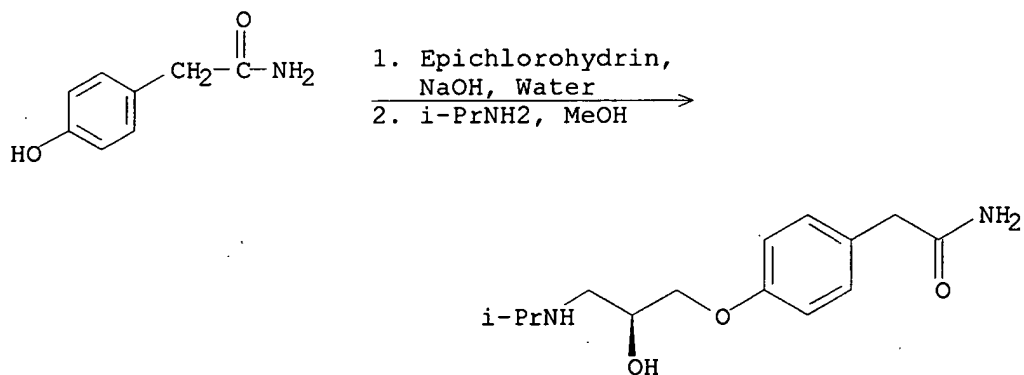
L3 ANSWER 4 OF 6 CASREACT COPYRIGHT 2005 ACS on STN



REF: PCT Int. Appl., 9110642, 25 Jul 1991
NOTE: stereoselective

L3 ANSWER 5 OF 6 CASREACT COPYRIGHT 2005 ACS on STN

RX(3) OF 3 - 2 STEPS

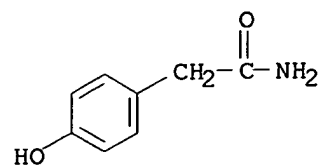


89%

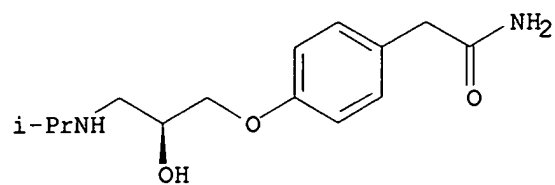
REF: Jpn. Kokai Tokkyo Koho, 03077856, 03 Apr 1991, Heisei

L3 ANSWER 6 OF 6 CASREACT COPYRIGHT 2005 ACS on STN

RX(6) OF 8 - 2 STEPS



1. Epichlorohydrin,
NaOH, Water
2. i-PrNH₂, MeOH



89%

REF: Eur. Pat. Appl., 435068, 03 Jul 1991